MapCreate™ 6

Custom Mapping Software for the Atlas™ GPS

Installation and Operation Instructions

For free owner's manuals and the most current information on this product, its operation and accessories, visit our web site:

www.brunton.com

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Notes

WARNING!

A CAREFUL NAVIGATOR NEVER RELIES ON ONLY ONE METHOD TO OB-TAIN POSITION INFORMATION.

CAUTION

When showing navigation data to a position (waypoint), a GPS unit will show the shortest, most direct path to the waypoint. It provides navigation data to the waypoint regardless of obstructions. Therefore, the prudent navigator will not only take advantage of all available navigation tools when traveling to a waypoint, but will also visually check to make sure a clear, safe path to the waypoint is always available.

WARNING!

When a GPS unit is used in a vehicle, the vehicle operator is solely responsible for operating the vehicle in a safe manner. Vehicle operators must maintain full surveillance of all pertinent driving, boating or flying conditions at all times. An accident or collision resulting in damage to property, personal injury or death could occur if the operator of a GPS-equipped vehicle fails to pay full attention to travel conditions and vehicle operation while the vehicle is in motion.

Section 1: Introduction
How this manual can get you into the field, fast!

Thanks for buying MapCreate™, the custom mapping software for Brunton units. This manual was written using MapCreate™ U.S.A. Beginning with version 6.3, all MapCreate packages work identically, but contain different mapping data.

We know you're eager to install the program and make some maps, but we have a favor to ask. Before you grab that CD, give us a moment to explain how our manual can help you get the best performance from our software. Our goal is to get you on the road, into the air, or out to the woods and water fast. Like you, we'd rather spend more time outdoors, and less time reading a manual!

That's why we designed this book so you *don't* have to read the *whole thing* from front to back for the information you want. You can skip around! If you know where to look, we've made it easy to find the tips you may need from time to time.

The manual has three main sections:

Section 1: Introduction contains the **Quick Start Reference**, which begins on page 2. We put it near the front of the book so you can turn to it quickly. Sec. 1 also includes background information on how MapCreate and its file formats work. To understand how to interpret our instruction text, be sure to see the **Typographical Conventions** segment on page 14. Don't miss the important notes on **File Encryption and Card Limits** on page 8.

Section 2: Installing MapCreate (on page 17) will help you get the program and the required LEI card reader correctly installed on your computer.

Section 3: User's Guide (on page 31) is the heart of our book. It introduces you to the MapCreate windows and toolbars. Sec. 3 contains easy-to-skim lessons on the program's main operations. These segments show you how to make highly customized maps and GPS information and get them into your GPS unit.

After you've gained some experience with the program, you may want to

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In addition to the Command Reference, the Help file includes material from this manual's User's Guide segment. Just press the F1 key to launch Help. You can find facts fast by electronically searching the Help File for the word or phrase you want.

In our printed manual, we've included other general supplemental material as appendices in the back of the book. Check out the Table of Contents to see the topics contained in each appendix.

After you have the software and card reader installed, browse through the tutorials in Sec. 3 to get you going. Later, when you want to try something new or you have a question about a particular function, skim through the manual's table of contents or search the Help file's Command Reference to read what you need.

If you're an experienced computer user, you can probably install MapCreate and the card reader without the manual. But, if you need a little coaching, jump ahead to Sec. 2 and we'll walk you through the install step by step. (If that's not easy enough, just grab the nearest teenager and ask him or her to install it for you!)

If you've skipped ahead and already have MapCreate installed, check out the Quick Start Reference below. If you're the type of person who wants more background information before you start, turn to How Map Create Works on page 5, or begin learning about the MapCreate screen components at the start of Sec. 3.

Quick Start Reference

This 13-step summary will get you started with a simple map. It assumes you have already made a full, default installation of the program, and one of the CDs is in your CD-ROM drive. (Complete installation instructions begin in Sec. 2.) For more detailed explanations, read through the lessons in Sec. 3. Before you start, make sure your Brunton / LEI MMC card reader is installed and working, and you know the reader's drive letter. *Many toolbar buttons are labeled, and an informative tool tip box pops up when you point to a button.*

How to make and save a rectangle map

1. Start MapCreate by clicking the Windows **START** button and choosing your version of **MAPCREATE** from the menu.

2. Maneuver the Master Map so you can see the area you want to include in your map. Use the **PAN ARROW** buttons to move north, south, east or west. Use the **ZOOM-IN** and **ZOOM-OUT** (**Z-IN** or **Z-OUT**) buttons as needed to close in on or back away from the area you're viewing.

3. Click the **DRAW MAP BORDERS** button in the toolbar. Move the mouse pointer above and to the left of the desired area. Click, *hold down* the mouse button and drag diagonally down and to the right until the desired area is enclosed with the green border box. Then release the mouse but-

ton. You have just drawn a Map Border.

4. With the Map Border displayed, click the **ESTIMATE CUSTOM MAP SIZE** button, on the Create Map toolbar. After a moment it will tell you your map's file size. If it fits the card, click **OK** to clear the message and jump to step 5. If the map file is too large for the card, click **OK** to clear the message, then redraw your map border a little smaller. Click the **DELETE MAP BORDER** button, click on any green border line, then re-draw a smaller border box. Use the Estimate button to re-check the size until it is correct.
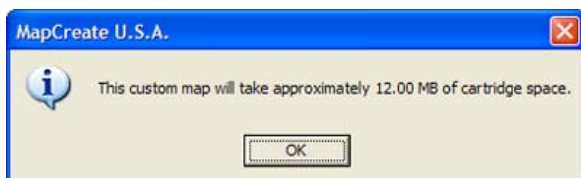
Click the OK button to clear the message box from your screen.

5. When your file is the right size, click the **CREATE MAP** button on the Create Map toolbar. The program displays a message about copyright and encryption.

6. If this is the first time you have tried to save a file to your memory card, MapCreate will need to register the card. Make sure you have a card in your card reader. Click **OK** to continue. (Clicking Cancel ends the process.) If you have already registered the card you are using, click **OK** and skip to step 11.
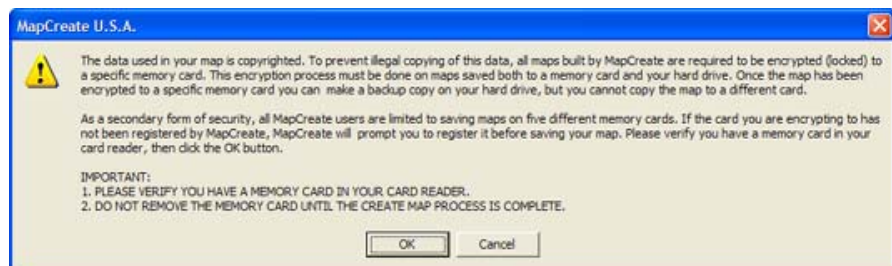
Read the message, and then click OK to continue.

7. Another message box asks whether you want to register your current card or not. Click **YES** to continue the card registration process.

3
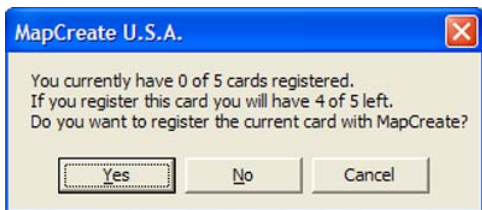
Click Yes to register your current memory card with MapCreate.

8. You can change the label on your memory card if you prefer. Delete the default name, "*Card1*," and enter the new *name*. Click **REGISTER** to continue.
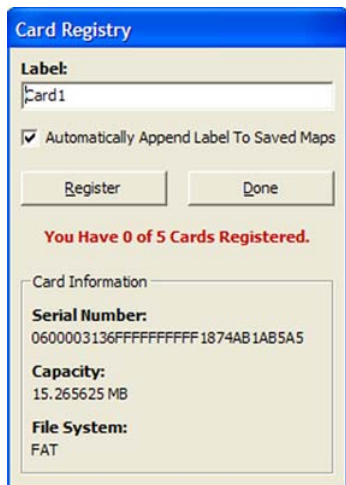
Delete the default label, if you prefer, and enter a new name. Then click Register to continue.

9. Another message box tells you when your card has been registered. Click **OK** to continue.
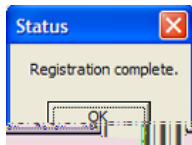
Click OK to continue the create map process.

10. The Card Registry window appears again. Click **DONE** to save your map.

Card Registry

Label:

CARD1

☑ Automatically Append Label To Saved Maps

[Register]   [Done]

You Have 1 of 5 Cards Registered.

Card Information

Serial Number:
0600003136FFFFFFFFFF1874AB1AB5A5

Capacity:
15.265625 MB

File System:
FAT

Click Done to complete the registry process.

NOTE:

If the **AUTOMATICALLY APPEND LABEL TO SAVED MAPS** box is selected (see figure above), MapCreate will automatically add your card's label to the end of whatever name you give the file you are saving. Let's use the figure above as an example. If we name our map "*Phoenix.lcm*," Map-Create will automatically name the file "*Phoenix_CARD1.lcm*." To cancel this option, click the Automatically Append… box to remove the check mark.

11. A window shows the progress of your map build. When the map is built, MapCreate displays the **SAVE AS** dialog box. Type a file *name* for your Map File, and click **SAVE**. (MapCreate will save your new custom map to your memory card.)

12. After the program has saved the map to your card, the Save Progress box disappears. You can now close MapCreate and remove the card from the reader.

13. Follow the instructions in your GPS manual for loading the MMC or SD card into your unit. It will automatically read the map when the unit is turned on.
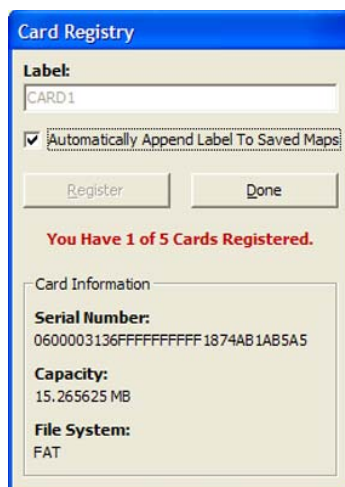
NOTE:

Custom maps and GPS data (waypoints, routes, trails, icons) are contained in two *different* file types. We describe their functions in the following segments on how the program works.

How MapCreate Works: the Basics

You'll be making maps faster if you understand the hoops MapCreate must

jump through to cram a high-detail map into your GPS unit.

First of all, those CDs you just purchased contain a whole bunch of *raw* digital cartography data. There are several hundred files of digital mapping information containing lake shorelines, navigation aids, roads, rivers and all the other information that goes into our high-detail maps.

It takes some fancy formatting to fit the whole world onto a few compact discs. Your GPS unit can't read those raw files (called atlas files). Even if it could, no GPS unit or MultiMedia Card (MMC) has enough memory to hold *that* much information.

This is where MapCreate comes in. The program looks at all those raw atlas files, shuffles the different types of information together, and then places them onto your computer screen. That's what we call the **Master Map**, the main window in the MapCreate interface. By changing various options in MapCreate, you can control how much geographic detail is displayed on-screen in the Master Map.

It's a pretty cool electronic map, but your GPS can't read it in this form, either. This is where *you* come in. You move around the Master Map and locate the area or areas you want to make a detailed map of. Then, you grab the computer mouse and draw a **map border** around the region you want. (There are two or three fun ways to do this…we'll describe 'em in a few minutes.)

Now, this map border isn't really a map yet — it just defines or outlines the area you want to include in the final GPS-friendly map. If you wish, you can save the boundary you have drawn as a **Map Border File**. MapCreate uses a map border like an electronic shopping list. The program looks at your border, grabs the appropriate raw atlas information, and then glues it all together as a *custom map*. Now you can save *this* data as a **Custom Map File** on an MMC (or SD card) and load it into your GPS unit. (If you like, you can backup the Map File by copying it from the MMC card to your computer's hard drive.)

GPS information — such as waypoints, routes or trails — is handled differently. You can click the mouse to set a waypoint or plan a route, then save that information as a **GPS Data File**. Just save it directly on or copy it to the MMC and this file is ready to load into your GPS unit. When your unit makes trails or waypoints in the field, that information is also saved as a GPS Data File. Your GPS unit can save the file to the MMC, which allows you to copy the GPS Data File back into your computer. Then you can open, edit and save it in MapCreate.

File Formats & Functions

Well, now you know what makes MapCreate tick. You may be ready to skip forward to where we explain how our text formatting makes the man-

ual easy to skim. If that's the case, move on to "How to Use This Manual: Typographical Conventions" on page 14. But, if you want to pick up an extra tip or two, look over this segment describing the file formats and memory cards MapCreate works with.

Map Border File

This file defines the boundary of the raw cartography data that is extracted and converted to a GPS custom map, or Map File. The border file information is displayed on the computer's Master Map screen as either a green rectangle (rectangle map border) or a magenta polygon shape (corridor map border.) The file extension is *.lmp.

In MapCreate 6.3, you can draw a border, then build and save a map without saving the border. However, some MapCreate power users still like to save their borders as Map Border Files. That lets them make changes to a border or even combine different borders without drawing them from scratch each time. By default, MapCreate will first save a Map Border File to the *C:\Program Files\LEI\MapCreate\Data* folder, but if you prefer you can save it on your memory card. If you save elsewhere, MapCreate remembers that location the next time you save. Version 6.3 also stores map border information in each Map File. This lets you generate a border simply by opening an existing Map File, including maps built by previous versions of MapCreate 6.

A Map Border File can contain one or more different map border sets, and these border sets don't need to be next to each other on the map. For example, you can draw a rectangle border around one lake and then draw a second corridor border around another lake several miles away, and include both of those border sets into one Map Border File. There is no limit (other than space on your hard disk, MMC or SD card) on how many different border sets you can include in a Map Border File. You can open and edit a Map Border File and then save the file with the changes you made.

Custom Map File

This is the actual map format used by your GPS unit. MapCreate takes the borders you drew (or saved as a Map Border File), extracts that area's information from the raw atlas data, then converts it to a Custom Map File, often called a Map File for short. We call this conversion process "creating the map." The file extension is *.lcm.

By default, MapCreate will first save a Map File direct to your MMC memory card. If you prefer, you can save a Map File on your computer hard drive. When hard drive space is available, many users like to archive Map Files in the *C:\Program Files\LEI\MapCreate\Data* folder. This allows you to change maps on your card and reuse a map over and over without creating it each time. If you save a map to the Data folder, MapCreate will remember that location the next time you save a map, during the current work session. The next time you start MapCreate, map saves will default back to the MMC card.

You cannot make changes to a Map File once it has been created. If you want to make changes to a map, return to its original companion Map Border File or retrieve the map borders by opening the Map File (*.lcm). Make your changes to the border, then create a fresh Map File. You can delete the old one, or just save the new map over the old map.

Important Notes: File Encryption and Card Limits

We collect and purchase cartography data from several sources. Much of this data is copyrighted, and our data suppliers require that we protect our maps from illegal copying. One level of protection requires that you have a MapCreate CD in the disc drive each time you launch the program. We also encrypt Map Files, and limit the number of MMC or SD cards you can use to store maps.

Map File Encryption

All maps built by MapCreate are required to be encrypted (or locked) to a specific memory card. This encryption process must be done on maps saved both to a memory card and your hard drive. Once a map has been encrypted to a specific memory card, you can make a backup copy on your hard drive, but you cannot copy the map to a different card. (Well, you can copy it to another card, but your GPS unit won't recognize it. To work, the Map File must reside on the card it was encrypted to.)

Limited Number of Cards

All MapCreate users are limited to saving maps on a maximum of five different memory cards. MapCreate tracks the number and identity of your cards by "registering" each card with the program. The software needed to register cards will not work with third-party card readers, so MapCreate will only work with the card reader from LEI. Once you have registered a card, it can never be unregistered and its place exchanged with another card.

Since you are limited to five, we strongly recommend that before you buy more cards, you should give some thought to the type of travel you do and your map size requirements. Memory cards come in several different sizes, so you need to think ahead and match card capacity to the type of maps you will need.

To help you decide what size cards to buy, make some map borders covering the type of travel you expect. Then use the Estimate Custom Map Size command to calculate the size.

For example, one Missouri customer frequently travels and fishes in the four-state area of Kansas, Missouri, Arkansas and Oklahoma. He purchased an additional 128MB MMC, which holds all four states at once. This lets him travel long distances for extended periods without needing a computer to change the maps on his card.

To give you an idea of how big a Map File can be, we made some exam-

ples using the regular versions (no topographic data) of MapCreate USA and MapCreate Canada, with all mapping categories included. (Size will vary depending on which package of MapCreate you have.)

In the U.S., Lake Michigan is approximately 26 MB, all of Missouri is 41 MB and the entire state of California is approximately 87 MB. A six-mile-wide corridor map from San Diego, California to the Maine-Canada border, following Interstate highways, is about 50 MB.

In Canada, a map of Lake Winnipeg (including the major lakes to the northwest) is 6.84 MB. All of Saskatchewan is 64 MB, all of British Columbia is 69 MB. A six-mile-wide corridor map from Prince Rupert on the west coast to Louisbourg on the east coast, following Trans-Canada highways, is about 35 MB.

Important Notes About Cards and File Size

The size of a Map File is important. It must be small enough to fit on the MMC (MultiMedia Card) that your GPS uses for data storage. This solid-state, flash memory device is about the size of a postage stamp.

At press time, the MMCs shipped with the GPS Accessories Pack version of MapCreate 6.3 are 32 MB size. If you're using a 32 MB MMC, your Map File must be *less than* 32 MB in order to fit on the card. (This space issue is the same as floppy disks; you can't really fit a 1.44 MB file onto a 1.44 MB diskette because some space is required for the disk's file allocation table. In the case of a 32 MB MMC, actual maximum useable space will be approximately 29 MB to 30 MB.)

MMCs and SD cards are used in a variety of other digital devices. Most electronics or digital camera stores sell MMCs and SD cards, and at press time they are available in 16 MB, 32 MB, 64 MB, 128 MB, 256 MB and 512 MB sizes. Cards with even greater capacity will likely be available in the future. MapCreate is a powerful tool for your GPS, because it allows you to match your map's file size and detail level to your card's memory capacity and your travel needs.

NOTE:
Due to software requirements in the GPS units, MMC or SD cards can hold a maximum of 32 different files at one time for the Brunton Atlas-The total amount of information cannot exceed the MMC size capacity, no matter what the number of files is. For example, an 8 MB MMC in an Atals could hold approximately one 7.66 MB file, or 32 files, so long as the 32 files totaled 7.66 MB or less.

Other brands of GPS units use direct serial cable connections to transfer high detail maps from a computer to the GPS device. Brunton switched from this traditional method to removable memory cards for several reasons. A USB card reader can transfer a large custom map to your unit 30 times faster than a serial cable connection. Removable media means you

don't have to take a computer and cable with you to load a new map in the field. If the unit is mounted in a vehicle, there is no need to dismount it and carry it to a computer. The effective mapping memory capacity of your GPS unit is restricted only by the capacity and number of memory cards you want to carry with you, up to the five-card limit. This is a handy feature for long journeys or for users who can't lug a laptop computer along.

Four factors control Map File size: 1. map detail level option settings, **2**. the number of map feature categories turned on, **3.** the amount of developed or naturally occurring features in the area and **4.** the amount of territory, that is, the number of square miles or acres in the area.

Detail Level Options can be set to high or medium. The higher the level of detail, the bigger the file size.

There are dozens of **Map Category Options** that you can turn off and on. They include natural features — such as rivers — and man-made items such as roads, businesses or other **points of interest**. The more categories and subcategories turned on, the bigger the file size.

The **amount of development** in an area is something you can't control. For example, one square mile of city streets will make a larger file than one square mile of wilderness with a few hiking trails.

The **amount of territory** you include in a map is a major factor. The more square miles or acres you include, the bigger the file size.

The lessons in the manual were written using MapCreate's default settings, with *high* detail and *all* categories turned on. If your first maps don't fit your MMC or SD card, refer to the Help file's Command Reference section for more detailed instructions on controlling file size.

GPS Data File
This file format contains all the GPS navigation information (waypoints, event marker icons, routes and trails) used by your GPS unit and MapCreate. The file extension is *.usr (for User file). By default, MapCreate first saves a GPS Data File to the *C:\Program Files\LEI\MapCreate\Data* folder, but if you prefer you can save it direct to your MMC card. If you save elsewhere, MapCreate remembers that location the next time you save. Since GPS data files are **not** encrypted, it does not matter how you move .usr files around. As with other Windows-based files, you can freely drag and drop these files back and forth from the hard drive to any MMC.

You can open and make changes in a GPS Data File once it has been created. The contents can include any combination of waypoints, routes, trails and event marker icons. The information shows up graphically on the Master Map as symbols with names. The same information is also available as text in a list window, such as the Waypoint List window.

Your GPS unit saves field-collected GPS information in the same format so

MapCreate can be used to save valuable travel or adventure data for a later trip. This also makes it easy to exchange GPS data with friends using Brunton Atlas GPS units.

ASCII Text File

This is a universal text file format compatible with word processors and other software. MapCreate can exchange routes and waypoint lists with other mapping programs by importing and exporting GPS information as comma-delimited ASCII text files. ASCII (pronounced "ask-ee") uses the *.txt file extension. You don't need to work with these files, unless you plan to exchange routes and waypoints between MapCreate and other mapping programs. If you want to create a text file manually, or if you need to manually edit a route or waypoint text file, this is the waypoint position format MapCreate will export or import:

[*latitude*],[space][*longitude*],[space][*waypoint name*]

Each position is written in degree (decimal) format. For North latitudes, use the *latitude* with no preceding symbol. For South latitudes, a minus sign must precede the number, like this: –*latitude*.

For East longitudes, use the *longitude* with no preceding symbol. For West longitudes, a minus sign must precede the number, like this: –*longitude*.

The first waypoint in the following example text file is N 36.06079846°, W 95.78354912°.

Latitude	Longitude	Waypoint Name

Comma and space separate items.

First wpt → 36.060798, -95.783549, Church 1
36.060784, -95.761647, Turn North 2
36.161831, -95.761529, Turn N-East On Hwy66 (3)
36.162581, -95.753760, Wpt 004*
36.169981, -95.751795, Wpt 005*
36.382616, -95.556565, Turn N-West 6
Last wpt   36.385315, -95.560847, Turn North 7
→ 36.503465, -95.561081, Stop Turn East 8

In routes, sequence is important. 1st line is wpt 1, 2nd line is wpt 2 and so

Text files are saved in the *C:\Program Files\LEI\MapCreate\Data* folder. For more information on how to use text files, see the Help file Command Reference topics "Export GPS Data," "Import Route" and "Import Waypoint List."

GPS Data Manger (GDM) File

This is an older file format used by MapCreate 5 and MapCreate 4 to hold navigation data (waypoints and such). MapCreate 6 can open these files, making the program backward compatible with versions 5 and 4. The GDM file extension is *.low. Although MapCreate 6 is designed to load and read

older GPS Data Files in the *.low format, MapCreate 6.0 will only save GPS Data Files in the newer *.usr format. Please note that your MapCreate 6-compatible GPS unit can only read *.usr files.

Atlas File

This is the "raw" file format for layer after layer of cartographic and hydrographic data on our CDs. You never have to work with these files directly. MapCreate pulls data from these files to display the Master Map you see in the main window on your computer. The program combines the information from a Map Border File with the Atlas Files to make Map Files for your GPS unit.

NOTE: *MMC Card Formats*

> If you ever have to format your MMC card, you should know that MapCreate will only read cards that are FAT formatted. MMC cards formatted using FAT 32 or NTFS will not work with these products.

WARNING:

> **You should never format an MMC containing a Navionics® chart or Jeppesen® aviation database. Formatting the MMC will permanently erase the chart or aeronautical data from the card.**

GPS Unit Compatibility

MapCreate 6.3 is compatible with all Brunton Atlas GPS units that use removable MMC/SD cards for map storage. Some units, however, may need a free software upgrade to work with MapCreate 6.3. Upgrades are available age.0.0Toead from th (Bruntonweb sitse. Fllnow te linkes to.0.0Toed -)Tj-0.

Mapping Detail: *There's more here than meets the eye.*

The Map Files you make with MapCreate contain more mapping detail than what is visible on your computer screen. Your MapCreate-6-compatible GPS unit takes full advantage of this extra information.

Find Highway Exit Services

For example, move your mouse pointer over a highway exit symbol on the computer map, and all you'll see is a pop-up tool-tip box listing the name of the exit. However, in a Brunton Atlas unit, the same exit symbol will show a pop-up box with the exit name *and* symbols of all the services available near that exit. The GPS unit can also provide you a list of those services.
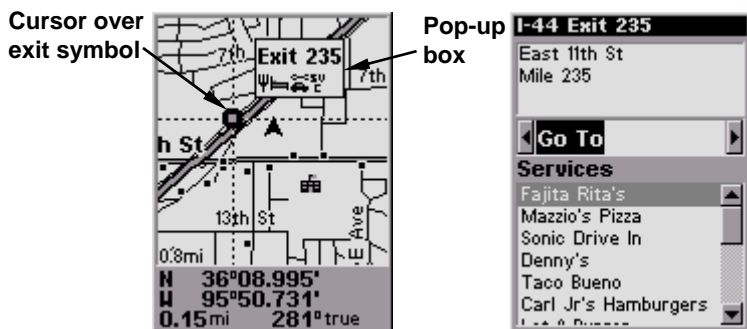
At left, an iFINDER GPS screen showing an exit services pop-up icon box. The iFINDER can then display a text list of those services near the selected exit, right.

Find Points of Interest

On the computer master map, moving your pointer over a Point of Interest (POI) symbol triggers a pop-up box with the POI's name. With MapCreate 6.3, when the information is available, the pop-up box also displays the POI's address and telephone number. This detailed pop-up only works for items classified as Points of Interest.
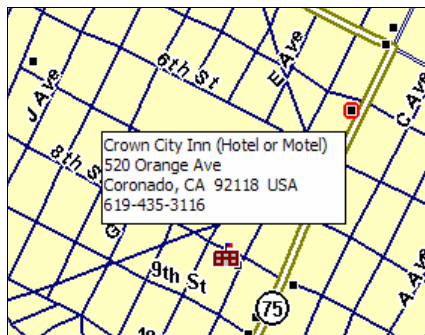
Map with pop-up box showing POI information

In a Brunton Atlas GPS, all POI's include the name, address and phone number.

Cursor over POI symbol

Pop-up box
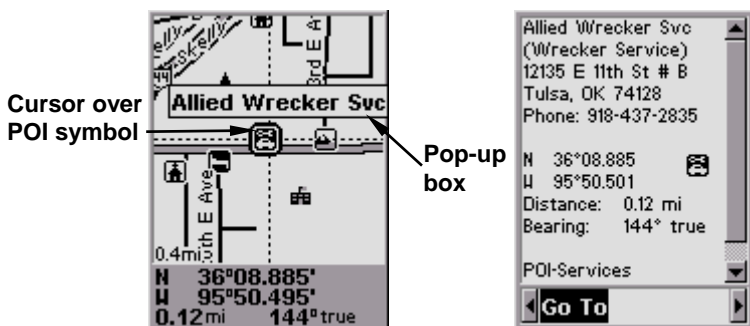
At left, an iFINDER GPS screen showing a POI pop-up name box. At right, you can call up a page of information on the POI, and the GPS unit can lead you to the POI's location.

Find an Address

You won't see addresses on your computer map (except listed in the pop-ups for some POIs). But when the MapCreate information is loaded into your GPS, you can search for a street address or a street intersection. In fact, your GPS unit can search by name for virtually every category of mapping detail contained in MapCreate.

All of this information is built into MapCreate's atlas database. As long as an information category is turned on and included in your Map File, the data will be available to your GPS unit.

With these and other elements, MapCreate gives you a phenomenal amount of mapping detail and information. For a more detailed list of the map categories available in MapCreate, see Appendix 2, *Map Category List*, on page 73.

How to use this manual: typographical conventions

Most Windows-based computer programs offer several ways to perform a task, and MapCreate 6 is no exception. With mouse and keyboard, you can access some commands four different ways! We'll show you all of them, but we save the most detailed information for our Help file's Command Reference section. There, the entry on each command includes a summary box showing all the menus and keyboard shortcuts (sometimes that's the only hint you need to get on with your mapping project.)

In our User's Guide segment (Sec. 3), we usually focus on one simple way to get the job done, usually by clicking the mouse pointer on a menu or toolbar button. In the User's Guide, many of the instructions are listed as numbered steps. This makes it a little easier to follow a series of instructions when you're skimming the material.

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In the printed User's Guide and the Help file Command Reference, the actual command clicks and keystrokes appear as sans serif, boldface type. So, if you're in a real hurry (or just need a reminder), you can usually skim the instructions and pick out where to click by finding the boldface commands. The paragraphs below explain how to interpret the text formatting for those commands and other instructions. (If you're already familiar with Windows or many other software manuals you can probably skip forward to Section 2: *Installation*, on page 17.)

Mouse

The mouse controls the movement of a graphic symbol on your screen called the mouse pointer, sometimes also referred to as a mouse cursor. The mouse performs an action by moving the pointer over a menu, a button or the map and then clicking the appropriate mouse button.

When the word "click" is used alone, it means "left-click," or to press and release the left mouse button. When you need to use the right mouse button, we will say so explicitly, such as "Right-click on the waypoint."

Sometimes a command requires more than one click. When we say "double-click," it means to rapidly click the mouse button two times.

Keyboard

The keys on your keyboard may not be labeled exactly as they are in this manual. All key names are shown in bold, sans serif type. For example, the "Control" key is shown as **Ctrl** and the "Enter" key is shown as **Enter**.

Keys are sometimes used in combinations. For example, **Ctrl+T** means to hold down the **Ctrl** key while pressing the **T** key. The hot key sequence **Alt+T|W** indicates a two-step combination: hold down the **Alt** key while pressing the **T** key, release, then press the **W** key.

"Arrow keys" is the collective name for the up arrow, down arrow, left arrow and right arrow keys.

To choose a command from a menu, you can use the mouse or press a key combination.

Instructions

Words in small capital letters, in a bold sans serif type, indicate that you are to take an action of some kind with a command, menu, box or other item. For example, "You can use the Create Route command to plan a path to navigate with your GPS. To begin the route, choose **CREATE ROUTE**."

When the phrase "choose command" is used in the Help file Command Reference section, it means to run or execute the specified command. For example, if the manual says "choose **CREATE WAYPOINT**," it means to run the Create Waypoint command. You can choose commands by clicking the mouse pointer on the menus or toolbar buttons, or by pressing the appro-

priate hot key or shortcut key on the keyboard.

Commands are sometimes described as menu sequences, to help you find the command faster. For example, "to open the Trail List window, click **VIEW|TRAIL LIST**," means to mouse click on the main menu's View command and then click the Trail List command on the submenu.

Specific text or numbers you must type are shown in bold, sans serif type. For example, if the manual says "Enter a Zoom range of **650** miles," you would click in the Zoom Range Window, type the numbers 650, then press the **Enter** key.

Place holders for other items you must supply yourself, such as file names, are italicized. For example, when the manual says "Enter a *name* in the File Name text box," you would click in the text box, type the name you want to use for the file, then press the **Enter** key.

This manual is written specifically for MapCreate™ 6.3, but for simplicity, the program is often referred to as "MapCreate" or "MapCreate 6."

Section 2: Installing MapCreate 6.3

System Requirements

MapCreate 6 requires the following *minimum* system resources:

- IBM® compatible PC.
- Pentium® 133 MHz or faster processor.
- 32 MB RAM
- approximately 300 MB free hard disk space, depending on your version of the program.
- 256 color display.
- Microsoft® Windows® 98 or later.
- CD-ROM drive.

MapCreate will run on a system with the above specifications, but the program will work slowly. A faster processor and more RAM will significantly improve program operation. You can also optimize performance by installing as much of the program as possible to run from your hard drive instead of the CD-ROM drive. (Do this by using the Custom or Full install modes, described below.)

IMPORTANT NOTES:

For copy protection purposes, *you must have one of the MapCreate CDs in the disc drive each time you launch MapCreate.* Depending on the type of installation you select, you may remove the CD after starting the program. (This allows you to use the CD drive for another purpose, such as listening to music, while working with maps and GPS data.)

The data used in our maps is copyrighted. To prevent illegal copying of this data, all maps built by MapCreate are required to be encrypted (locked) to a specific memory card. Encryption requires MapCreate to retrieve unique information from your card. This requires special software not compatible with third party card readers, so *MapCreate will only work with the LEI MMC/SD card reader provided by Brunton.* If the card reader is not correctly installed with the LEI drivers, MapCreate will not open. After all the MapCreate files are installed, the installation program will install the drivers for the LEI card reader.

Installation Types

There are three types of installations:

Compact - Installs navigational aid data, the low-detail background map (Master Map) data and world-wide, medium-detail map data. Takes approximately 300 MB of free hard drive space.

Custom - Allows installation of the program and all map data files

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on the hard drive. *Caution: Be patient if you choose custom install. It may take several minutes for all the files to install to the hard drive. You will be prompted to insert the appropriate disc(s) throughout the installation.*

Full - Installs every possible option and all the mapping data. MapCreate runs fastest with this option. *Caution: Be patient if you choose full install. It may take several minutes for all the files to install to the hard drive. You will be prompted to insert the appropriate disc(s) throughout the installation..*

For Compact or Custom installations of version 6.3: the high detail map data is organized into multiple regions recorded on different CDs. The manual addendum shipped with your MapCreate package contains a map showing which region is on which CD. Refer to the map to help you decide what regions to install on your hard drive.

Installing MapCreate

For best performance, we suggest you uninstall previous versions of Map-Create before installing version 6.3. To install MapCreate, follow these steps:

WARNING:

You must close all other open applications and temporarily disable any virus scan software before you install MapCreate. Some virus scanning programs will cause undefined error messages and prevent MapCreate from installing correctly. If strange errors occur during install, make sure virus scan software is off, then reinstall MapCreate. When installation is finished, remember to turn your virus scan software back on only *after* your computer has rebooted and MapCreate and the card reader are installed.

1. Insert the USA-West CD-ROM (or disc 1) into the computer's drive.

2. The MapCreate 6.3 setup program should start automatically and you can skip to step 5. If it does not, click the Windows **START|RUN** button.
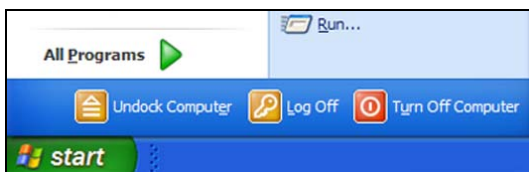
Click the START button on the Windows taskbar, and then click RUN.

3. Type **D:\setup.exe** (where D: is the drive letter for your CD-ROM)

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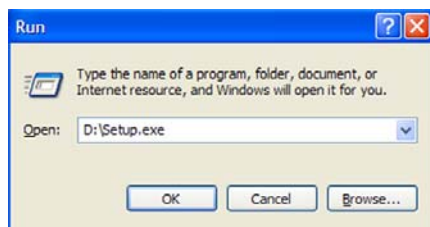
Type the setup command directory path and file name.

4. Click **OK** to begin installation.

NOTE:

    If you are using Windows 2000 or Windows XP Professional, you may receive an error message if you are not logged on with administrator privileges. If this occurs, you can complete the MapCreate installation by first logging on as an administrator, then proceeding with step 1 on page 18.

5. Follow the on-screen instructions:
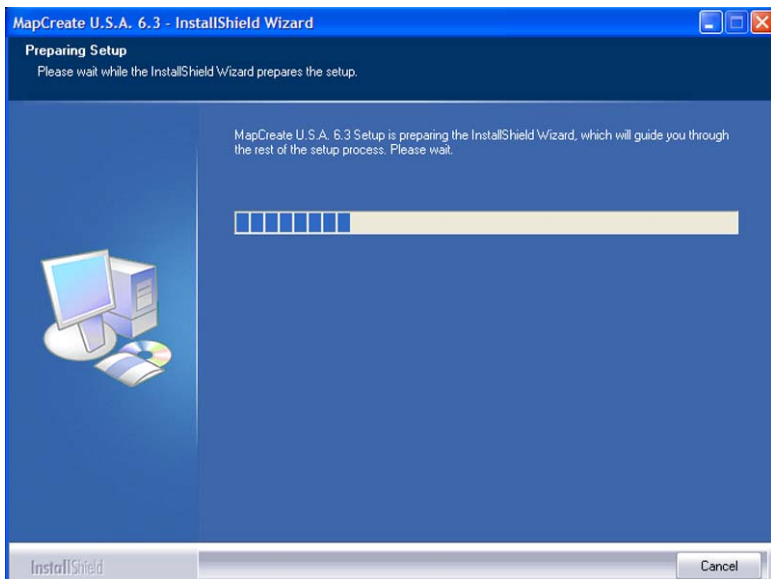
A. InstallShield® will load. A message box will appear, reminding you to disable any anti virus software. Click OK to continue.
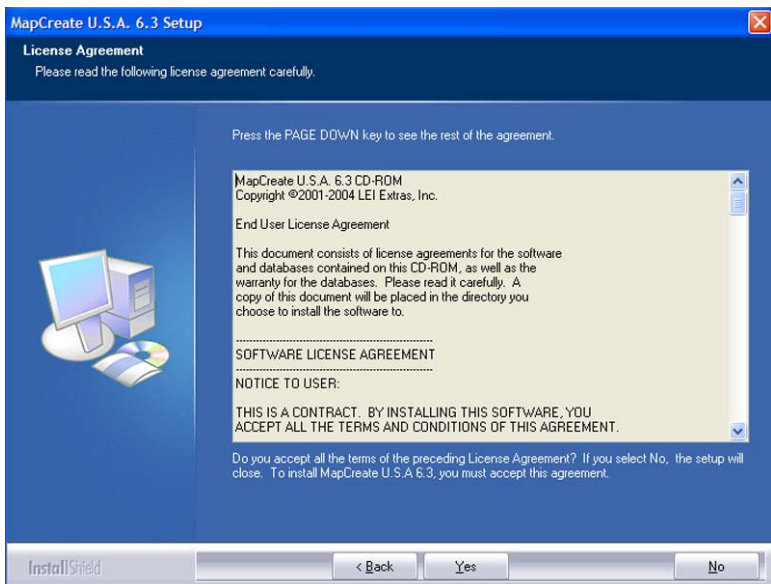
B. Read the complete License Agreement. If you accept the agreement, click the YES button; if you do not accept, click the NO button, and MapCreate will not be installed on your computer.
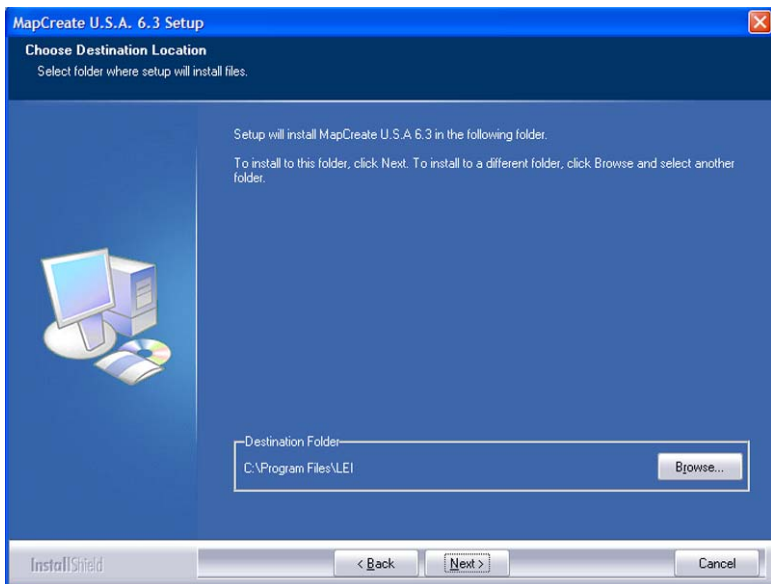
C. Choose a destination folder for the program. You can accept the default (recommended) or you can choose another location. Click NEXT to continue the installation.
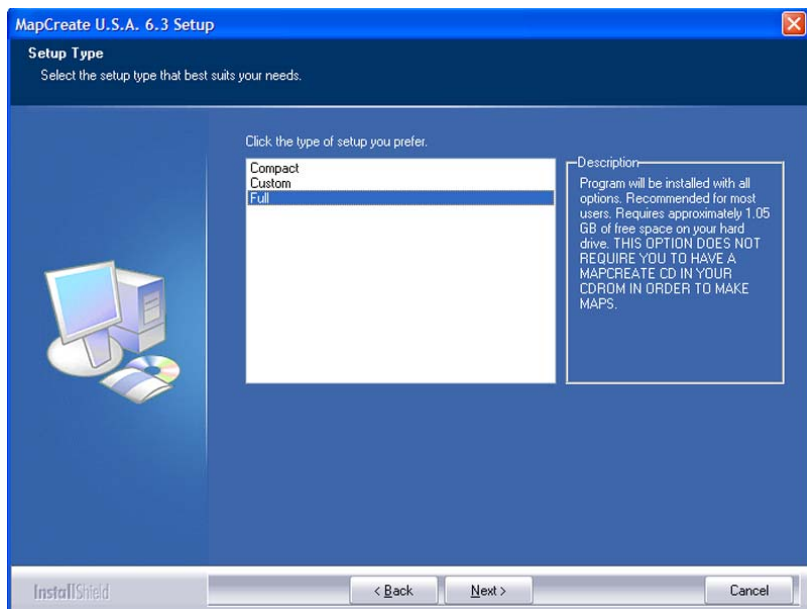
D. Select the type of setup, and click the NEXT button to continue the installation. (See page 17 for a description of the options.)
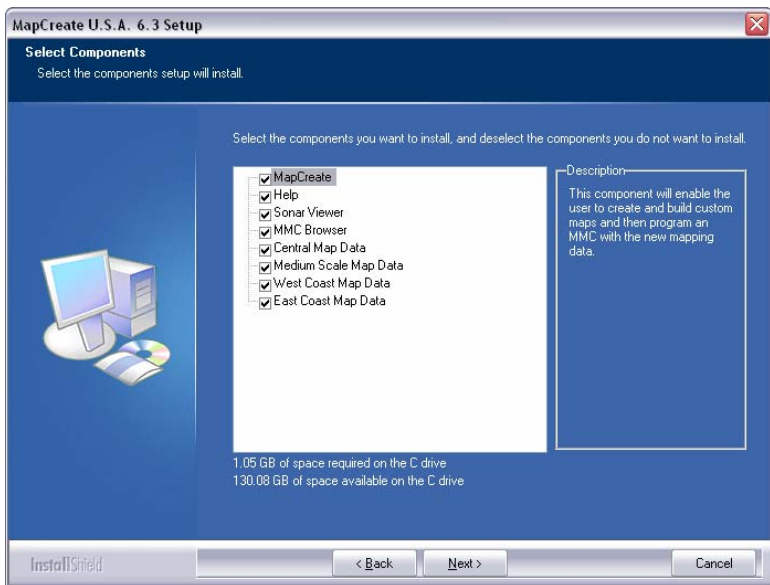
**E. If you chose Custom install, select the components to install. Then click
Nᴇxᴛ to continue.**
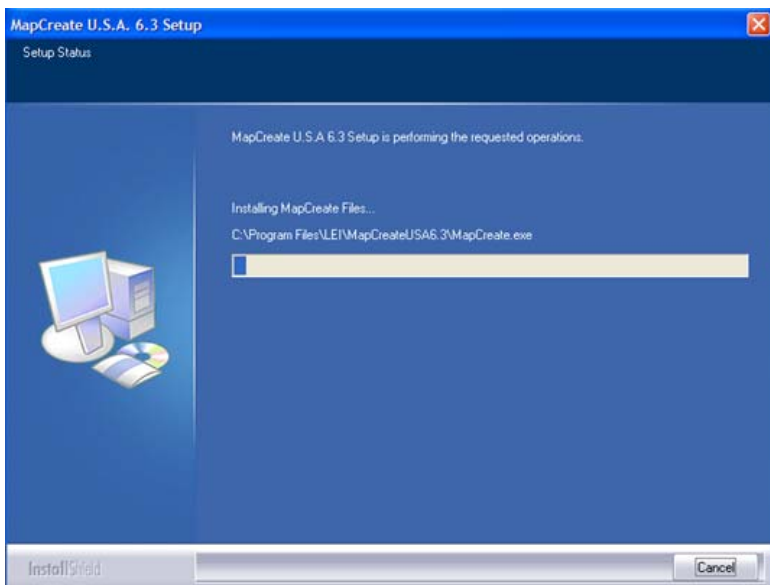
**F. With all your preferences determined, InstallShield will
begin copying files. A progress window is shown.**
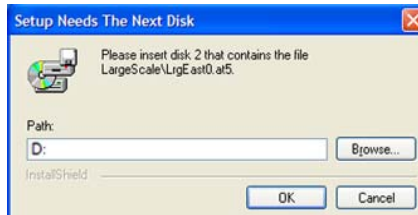
G. If needed, the install will prompt you for additional discs. When asked, insert the appropriate CD and click OK to continue the setup.
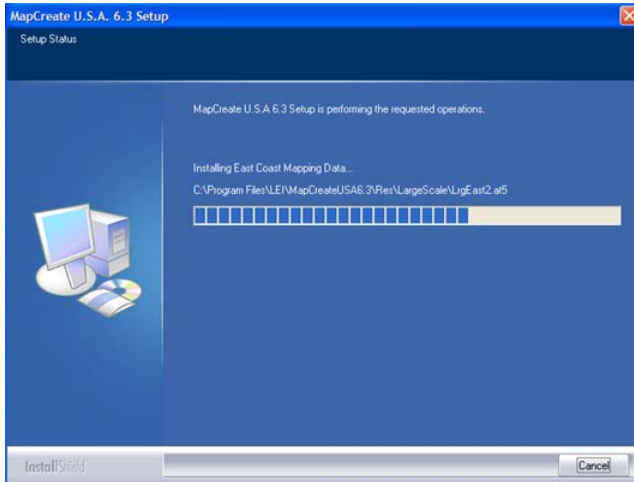
H. The Setup Status window shows the progress of the installation.
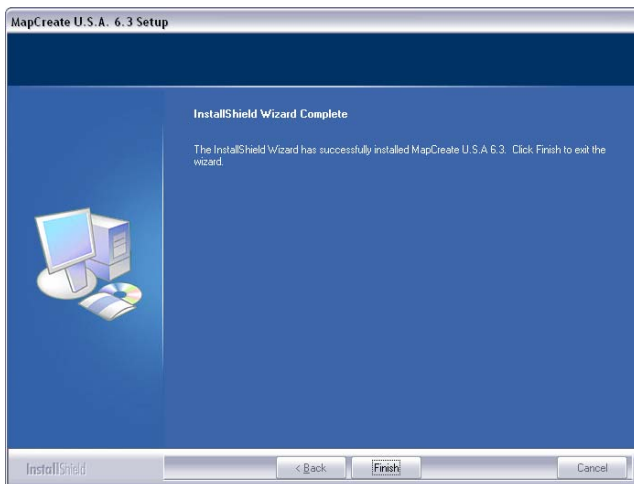
I. When the program files have been copied, InstallShield Wizard will display a message that setup is complete. Click FINISH to close the wizard program.

MapCreate Installation

MapCreate is ready to install your LEI card reader. MapCreate will only work with the card reader and drivers available from LEI. The Windows plug and play install will not work correctly with MapCreate. Click OK to install card reader drivers.

OK
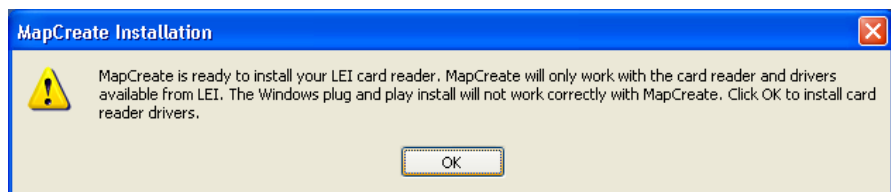
J. After the MapCreate files have been installed on your computer, you are prompted to install the MMC card reader drivers. Make sure the card reader is *not* plugged in yet, then click OK to continue. (If you stop the program, you can install the card reader later, but *MapCreate will not run until the card reader is installed*. To install later refer to the instruction sheet that came with the card reader.)

InstallShield Wizard

USB SD/MMC Reader Setup is preparing the InstallShield® Wizard, which will guide you through the rest of the setup process. Please wait.

Cancel
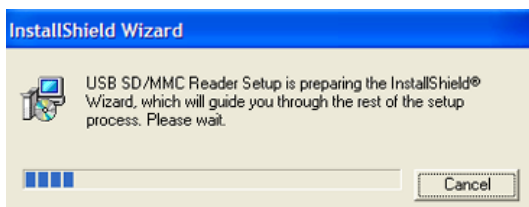
K. The setup program for the USB SD/MMC Reader loads.

USB MMC-SD Reader InstallShield Wizard

Welcome to the InstallShield Wizard for USB MMC-SD Reader

The InstallShield® Wizard will install USB MMC-SD Reader on your computer. To continue, click Next.

< Back   Next >   Cancel
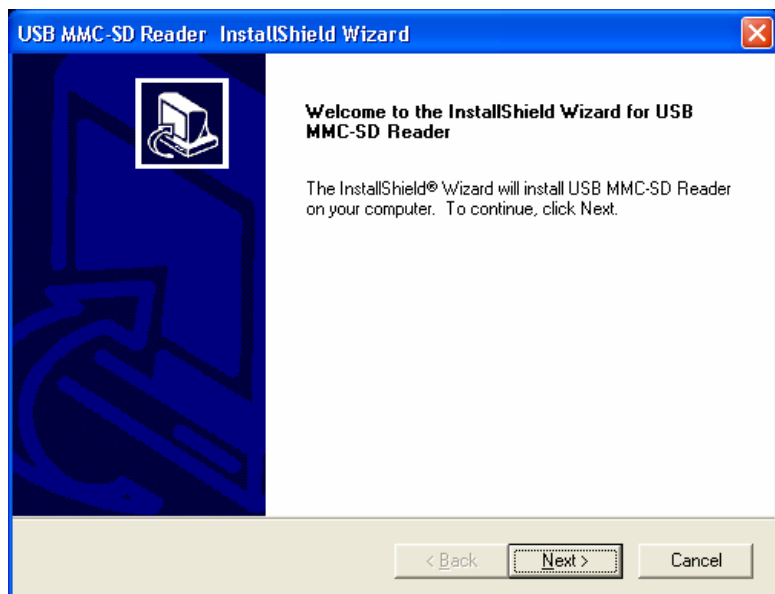
L. When the setup program has loaded, a welcome screen is displayed. Click the NEXT button when you're ready to begin the card reader installation.
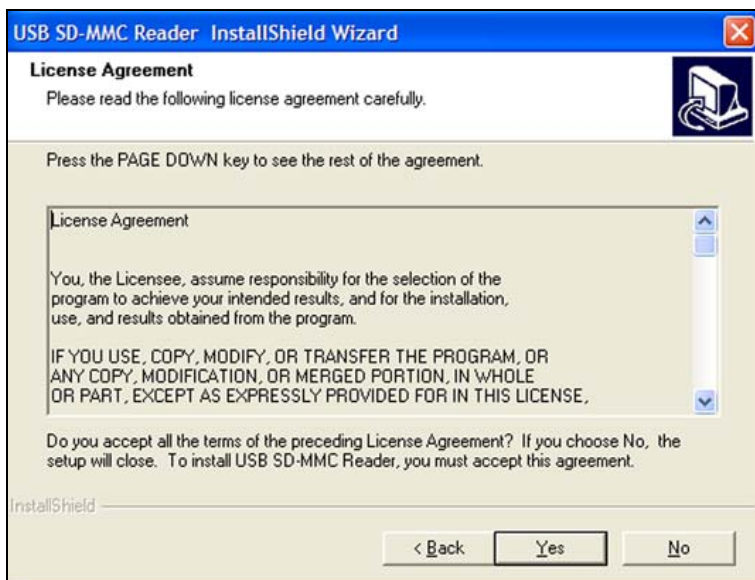
M. Read the complete License Agreement. If you accept the agreement, click Yes. (If you do not accept, click No, and the SD/MMC Reader software will not be installed on your computer, and MapCreate will not run.)
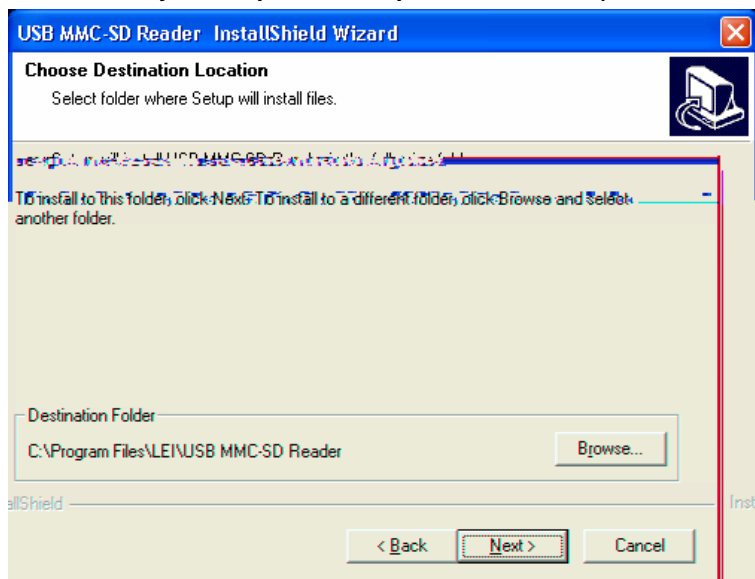
N. Choose a destination folder for the SD-MMC Reader program. This is where you want the files to be located on your hard drive. You can accept the default (recommended) or choose another location. Click Next when you're ready to continue.
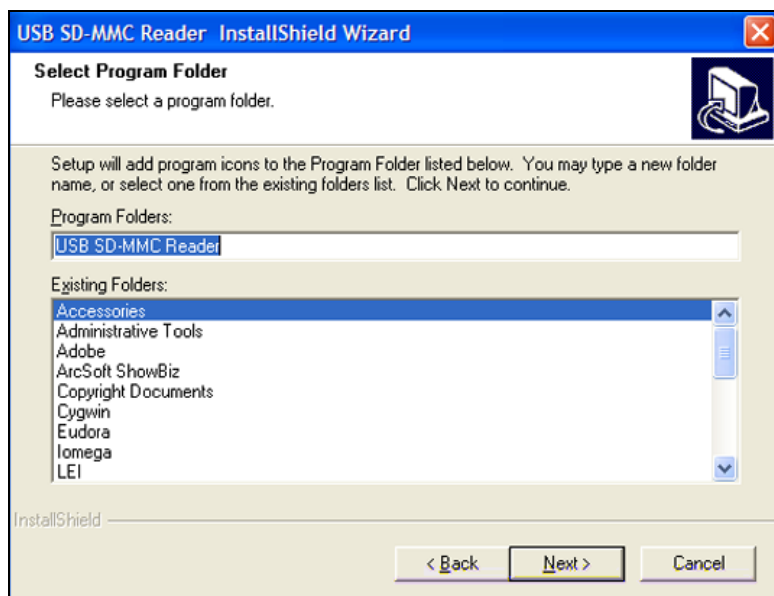
O. Select the folder where you want to place the shortcut for the SD/MMC Reader program. You can accept the default or choose another location. Click NEXT to continue the installation.
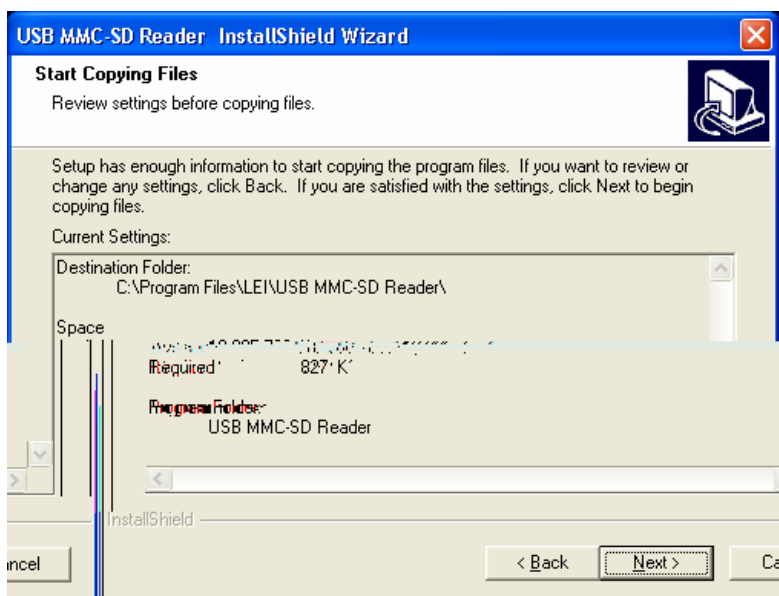
P. The setup program is ready to install the SD-MMC Reader program on your computer. Click NEXT to continue.
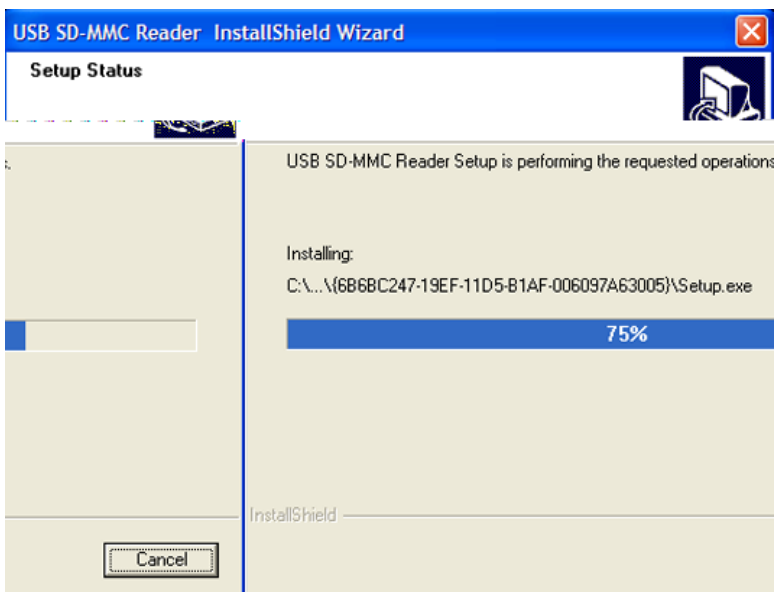
The setup program displays the progress of the installation.
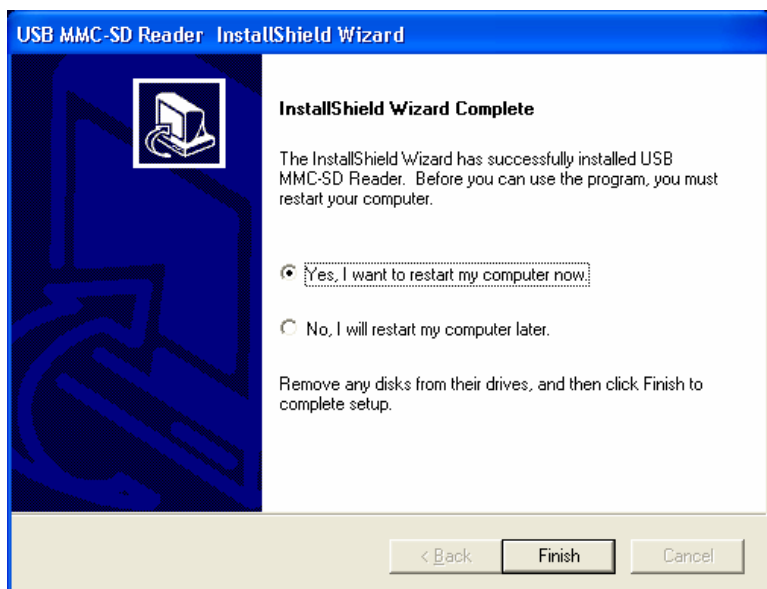
Installation complete.

6. When the card reader install program is finished, the InstallShield wizard completion window appears. We *strongly recommend* that you restart your

computer now. MapCreate and the card reader *will not run* until your computer restarts.

With the "restart my computer now" option selected, click **FINISH**. After the computer restarts and Windows has finished loading, plug the card reader into a USB port. After Windows finishes installing the card reader, it will appear as an additional drive letter in My Computer. The card reader and MapCreate are ready to use. *If you are running an anti virus program on your computer, be sure to turn it back on at this time.*

Care of your MapCreate CDs
Protect the shiny recorded surface of the compact discs from scratches, fingerprints and dirt. Hold a disc along the outer edge or by the center hole. Clean a dirty disc with a soft, dry cloth. You can also use a commercial CD cleaner or ethyl alcohol to remove fingerprints and dirt. Do not leave your discs in direct sunlight or in a hot, humid location.

Starting MapCreate
To start MapCreate, make sure one of the MapCreate CDs is in your CD-ROM drive. Click the Windows **START** button, then click on the MapCreate shortcut in the program menu. (A disc must be in the drive each time you start the program.)
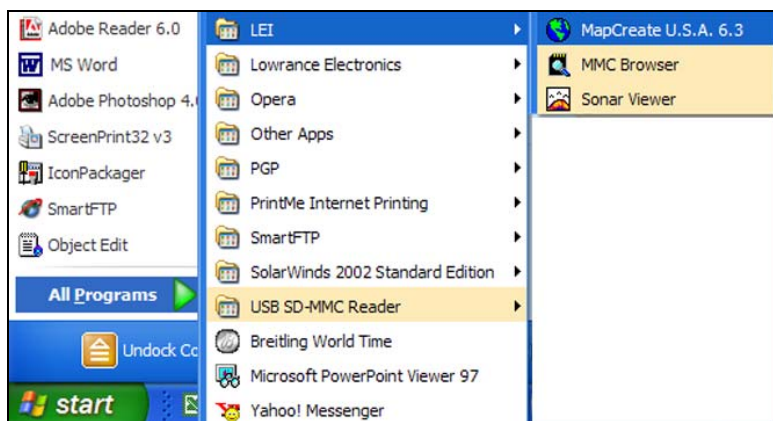
**Click the Windows Start button, All Programs, LEI, and then
your MapCreate version. (This is the default location for the shortcut).**

If you prefer, you can start MapCreate using the alternate methods described below.

To start MapCreate from Windows Explorer:
Open Windows Explorer, if it is not already running. Navigate to the folder in which MapCreate is installed. By default the path is: C:\Program Files\LEI\MapCreate. Next, double-click MapCreate.exe to launch the program.

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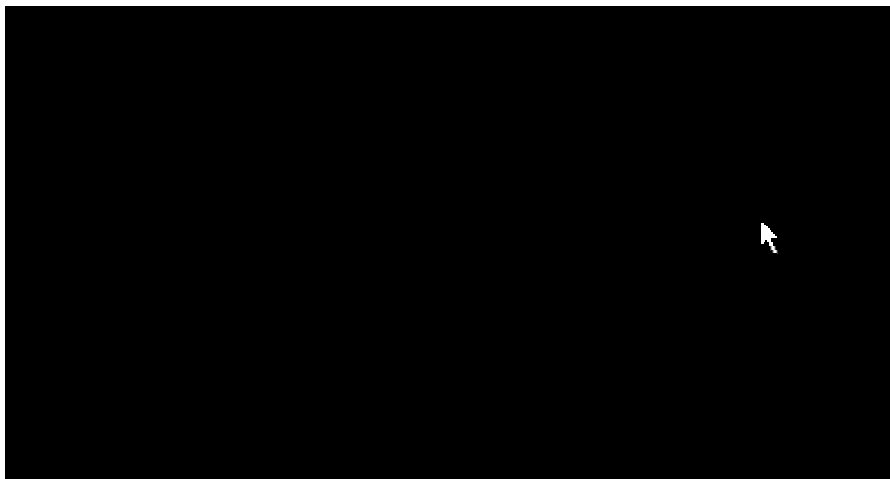
Double-click MapCreate.exe to start MapCreate 6.3 from Windows Explorer.

For more details on the many other ways to create and manipulate shortcuts, open your Windows help file and search for the word "shortcut."

Notes

Section 3: User's Guide
Working With MapCreate

Starting MapCreate

If you installed the Compact version of MapCreate, make sure the CD-ROM for the area you intend to use is in the CD-ROM drive. Otherwise, you can insert any MapCreate CD. *(Remember, even if you installed the Full version, a disc must be in the drive each time you start the program. This is one of MapCreate's copy protection features.)*

NOTES:

- For earlier MapCreate owners: If you have both an earlier version of MapCreate and MapCreate 6.3 installed on your computer and run the programs from the CD, be sure you have the correct version of the CD in your drive when working with the two programs. Running MapCreate 6.0 with the version 6.3 CD or vice versa will generate an error message when you try to build a map. The data discs are not compatible with each version of the program. If you made full custom installations of both programs to your hard drive, this error message will not appear because each version has its own unique directory on your hard drive.

- For Compact or Custom installations of version 6.3: the high detail map data is organized into multiple regions recorded on different CDs. The manual addendum shipped with your MapCreate package contains a map showing which region is on which CD. Refer to the map to help you decide what disc to use. If you are using a Compact installation and you want to see medium detail world maps, use the disc 1 CD.

You can start MapCreate by clicking the **START** button and choosing your version of **MAPCREATE** from the menu, or you can double-click the MapCreate icon in the MapCreate program group.
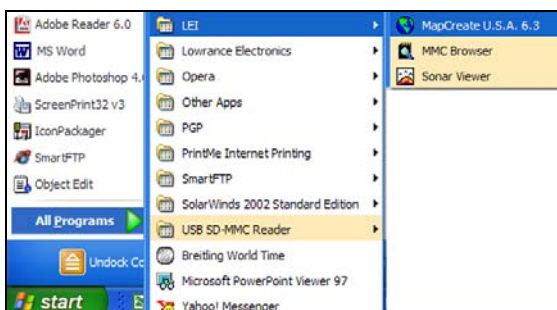
Start MapCreate by clicking the Windows START button and then choosing MapCreate from the Start menu.

The MapCreate Screen

When you start MapCreate, the opening splash screen appears while the program is loading. It will take a moment or two for the program to load the map detail.

MapCreate 6 splash screen appears while program is loading.

Once it's finished loading, you'll see a screen that looks like this, with a map of the world and the Map Categories window open:
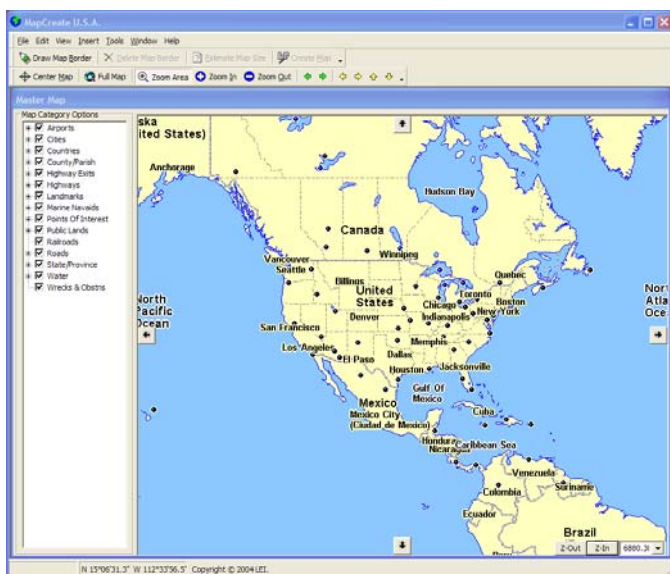
MapCreate 6 opening screen.

MapCreate has several other windows that are used to control mapping data. If they were all opened, or turned on, the program interface would look like this (labels have been added for illustration):
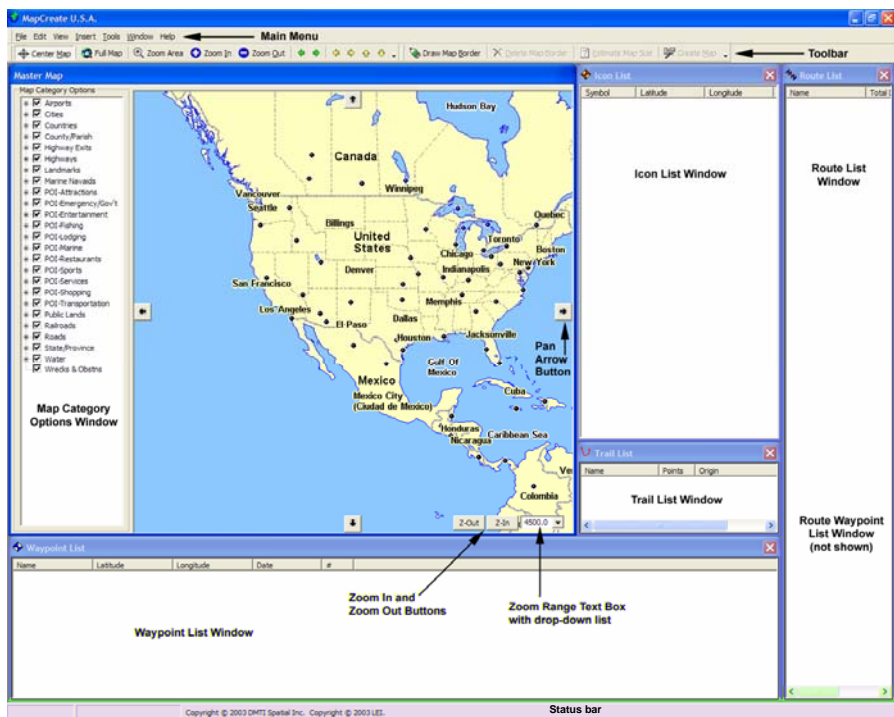
MapCreate 6 GPS text list windows.

You can drag the borders of these windows to resize them to suit your viewing preferences. The windows can also be manually arranged around the screen, or you can just use the default Auto Arrange setting, under the Window menu. When you close the program, MapCreate remembers the windows and map you were using. The next time you start MapCreate, the program opens the previous map and windows, just as you left them.

Closing MapCreate

To close or exit MapCreate click **FILE|EXIT** or click the X **CLOSE** button at the top right corner of the screen.

MapCreate Screen Components

If you're pretty familiar with how Windows programs work, you may want to skip ahead to the segment on Creating Rectangle Map Borders on page 46. But, before we actually start mapping, we'd like to describe the different elements of the MapCreate screen. The next few segments explain what they are and what they do. You'll also learn how to move around the map.

Master Map Window

The largest window is the Master Map window. It displays the basic world background map you'll use to prepare Map Border Files and Map Files for

your GPS. You can close the other list windows if you're not using them. (You can always open them later when you need them. Click **VIEW** and then click the window name.) This allows you to see as much of the Master Map as possible on your computer screen. To close the other windows, click the X **CLOSE WINDOW** button in the top right corner of each window frame. You cannot close the Master Map window.
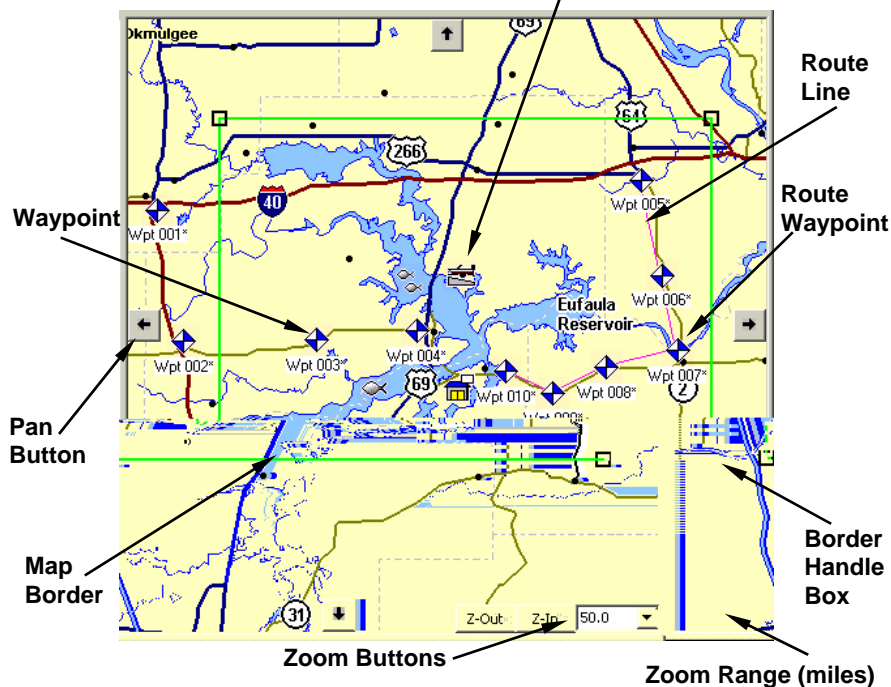
Master Map window shows a rectangle map border around Lake Eufaula, along with a route, waypoints and event marker icons. The Zoom Range is 50, which indicates that it's 50 miles across the map.

Tips:

- You can use the Print Map command to print what's displayed in the window. This lets you make a quick, customized, paper backup map for your travels. (A prudent navigator never relies on only one source of navigation information.) Because of variances in monitor size, screen resolution, paper size and printer drivers, what you see in the Master Map window may not fit your paper page exactly.
- When your mouse pointer moves over a map feature or landmark symbol, a Pop-up Tool Tip Box appears listing a name or description of what the symbol represents.
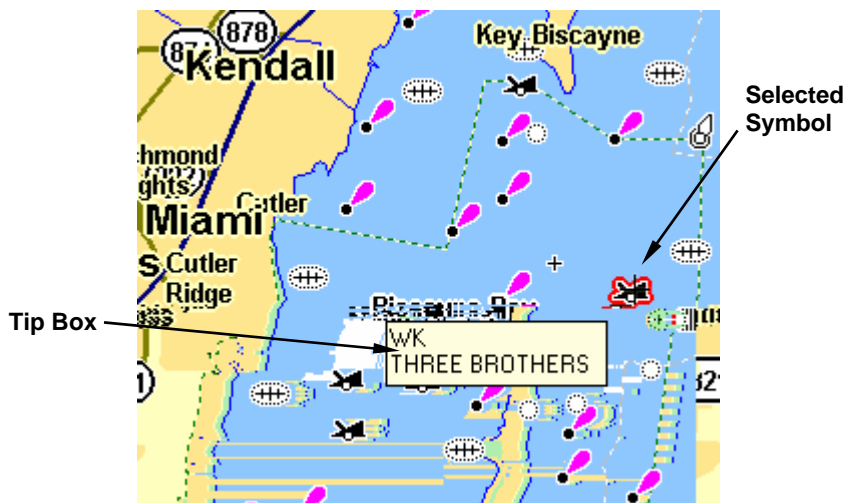
Pop-up Tool Tip box. When the cross-hair pointer hovers over the visible wreck symbol, a red border surrounds the symbol and the tip box appears. This wrecked vessel is the "Three Brothers."

Main Menu

MapCreate's main menu is similar to that of other Windows programs. It consists of the File, Edit, View, Insert, Tools, Window and Help menus. You can click with a mouse or use the hot keys to access the menus and their submenus. For example, to see all the commands on the File menu, use the mouse pointer to click **FILE** or use the keyboard and press the hot keys **Alt+F**. Some commands also have shortcut keys, such as **F1** for the Help command. All the commands — with their hot keys and shortcut keys — are listed alphabetically in the Help file's Command Reference section.

Toolbars

MapCreate 6.3 includes five different toolbars, all designed to speed you on your way to creating maps quickly. Each toolbar contains a row of buttons that you can click to execute various commands. You can move the mouse pointer over a button and a pop-up tool tip box shows the button name and/or function.

The first time you start MapCreate, only the Create Map (Easy) and the Map Navigation toolbars are visible. [You can display either the Create Map (Easy) or the Create Map (Advanced), but not both at the same time.] To display additional toolbars or remove one from your screen:

1. Click **VIEW|TOOLBARS**. A toolbar is active when a check mark is displayed in the box to the left of the toolbar's name. If the toolbar is not active, the box is empty.

2. To view a toolbar click the box beside the name of the toolbar you want

to display. A check mark appears, and the toolbar is displayed on your screen.

3. To remove a toolbar click the check box beside the name of the toolbar you wish to close. The check mark disappears, and the toolbar is removed from your screen.

4. Repeat the procedure for each toolbar you wish to display or remove.
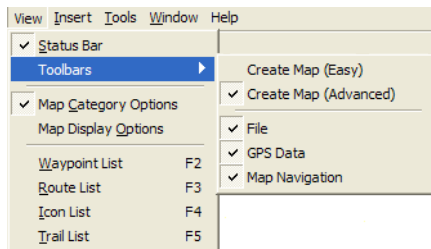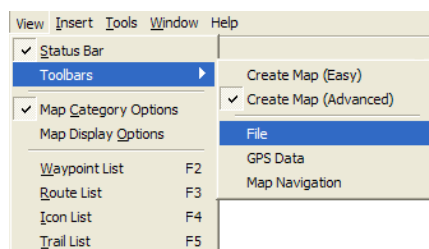
At left, the Create Map (Advanced) toolbar is checked, so it is active, or visible. The figure at right shows that all four toolbars are active. To remove a toolbar, simply click the check mark.

The tables below describe the commands on each toolbar.

NOTE:
   The Create Map toolbar allows you to choose between an easy version and an advanced version (both described next).
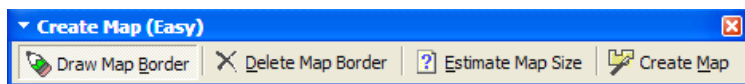
Create Map (Easy) toolbar

Draw Map Border	**Draw Map Border:** draws map borders as green rectangles.
Delete Map Border	**Delete Map Border:** clicking anywhere on the map border or on any black handle box with this tool removes the border from your map.
Estimate Map Size	**Estimate Map Size:** predicts file size from current borders.
Create Map	**Create Map:** creates a map file your GPS unit can use from an area defined by a map border.

Create Map (Advanced) toolbar

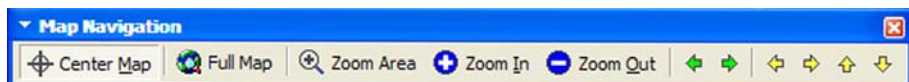|	
Draw Map Borders	**Draw Map Borders:** draws map borders as green rectangles.
Draw Corridor Map Borders	**Draw Corridor Map Borders:** draws irregularly-shaped magenta corridor borders. Useful for areas that don't fit neatly into rectangle borders, or for making strip maps that follow cross-country routes.
✕	**Delete Map Border:** clicking anywhere on a green map border or repeatedly clicking the handle boxes of a magenta map border with this tool removes the border from your map.
🔳	**Clear Map Border:** lets you clear or erase all map borders displayed on the map.
?	**Estimate Map Size:** calculates an estimate of the final file size of your map based on the current map borders.
Create Map	**Create Map:** creates a map file your GPS unit can use from an area defined by a map border.
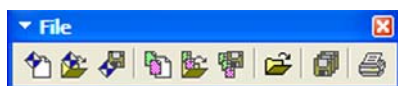
File toolbar

📄	**New GPS Data File:** clears or erases from the screen any GPS data appearing on the Master Map.
📂	**Open GPS Data File:** Opens an existing GPS data file.
💾	**Save GPS Data File:** saves to disk any new or edited GPS information displayed on the Master Map.
🔳	**New Map Border File:** clears or erases from the screen any map borders appearing on the Master Map.
📂	**Open Map Border File:** opens a map border file previously saved by MapCreate.

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	Save Map Border File: saves to disk any new or edited map borders displayed on the Master Map.
	Open Map: opens a map saved to disk.
	Save All: saves a map border file and then a GPS data file, when both types of information are displayed on the Master Map.
	Print Master Map: prints the current Master Map window display, including any GPS information shown on the map.

GPS Data toolbar

	Create Waypoints: lets you set a waypoint on the Master Map.
	Create Route: lets you create a route on the Master Map, with waypoints in a sequence.
	Create Icons: Lets you set an icon on the Master Map.
	Insert Waypoint: opens a dialog box that lets you set a waypoint on the map by entering position coordinates.
	Insert Route: opens a Route Waypoint List window and creates an "empty" route with no waypoints.
	Insert Route Waypoints: lets you change a route by inserting new route waypoints.
	Insert Icon: opens a dialog box that lets you set an event marker icon on the map by entering position coordinates.
	Cut: deletes text or a selected GPS data item from a waypoint list, route waypoint list or icon list and puts it in the Windows clipboard.
	Copy: copies text or a selected GPS data item from a waypoint list, route waypoint list or icon list to the Windows clipboard.
	Paste: inserts text from the Windows clipboard. Inserts a GPS data item from the Windows clipboard into its respective list window. (You cannot paste one type of GPS data into a list window for a different data type.)

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�	**Undo:** lets you reverse a command or function you have executed.
↻	**Redo:** lets you re-run a command or function you had previously reversed using the Undo command.
✕	**Delete:** erases a selected item from a waypoint list, route waypoint list or icon list.

⊕ Center Map | 🌐 Full Map | ⊕ Zoom Area | ➕ Zoom <u>I</u>n | ➖ Zoom <u>O</u>ut | ← → | ⇦ ⇨ ⇧ ⇩

Map Navigation toolbar

⊕ Center <u>M</u>ap	**Center Map:** clicking with your mouse anywhere on your map puts the point you clicked on at the center of the screen.
🌐 Full Map	**Full Map:** displays the map at the original default zoom setting.
⊕ Zoom Area	**Zoom Area:** lets you drag a selection box to zoom in on a specific area on the map.
➕ Zoom <u>I</u>n	**Zoom In:** reduces the number of square miles displayed on the Master Map Window.
➖ Zoom <u>O</u>ut	**Zoom Out:** increases the number of square miles displayed on the Master Map.
←	**Back:** displays the previous view of the map.
→	**Forward:** displays the view of the map that was on the screen before the "Back" button was clicked.
⇦	**Move Left:** click this to see additional area on the left side of the map (i.e., a given point will shift to the right, bringing into view an area that was previously off the left side of the map.)
⇨	**Move Right:** click this to see additional area on the right side of the map (i.e., a given point will shift to the left, bringing into view an area that was previously off the right side of the map.)
⇧	**Move Up:** click this to see additional area at the top of the map (i.e., a given point will shift down, bringing into view an area that was previously off the map at the top.)

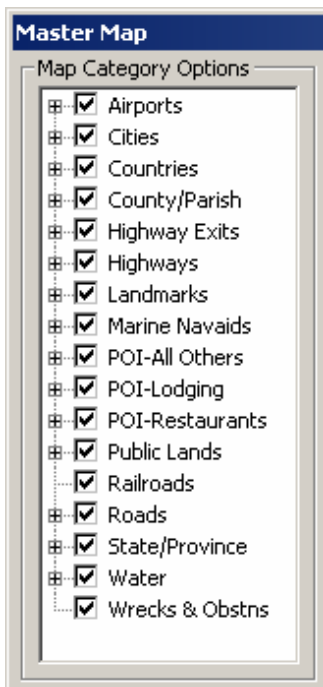|	**Move Down:** click this to see additional area at the bottom of the map (i.e., a given point will shift up, bringing into view an area that was previously off the map at the bottom.)

Map Category Options Window

This window controls how much mapping detail is displayed in the Master Map. Open and close the window by clicking **VIEW|MAP CATEGORY OPTIONS**. You can turn detail categories off and on by clicking in the check box beside them. A check mark shows that the category is turned on for display.

Each map category with a + sign to its left consists of a group of subcategories. Click on the + to display the subcategories. Each subcategory can be turned on or off individually by clicking the check mark in the box beside it.

NOTE:

For mapping information to be included in your final Map File, it must be displayed (turned on) in the Master Map when the Map File is created. Turning off unneeded information categories can help reduce file size if you are trying to fit a very large map onto an MMC with small amounts of memory.

Master Map

Map Category Options

- ☑ Airports
- ☑ Cities
- ☑ Countries
- ☑ County/Parish
- ☑ Highway Exits
- ☑ Highways
- ☑ Landmarks
- ☑ Marine Navaids
- ☑ POI-All Others
- ☑ POI-Lodging
- ☑ POI-Restaurants
- ☑ Public Lands
- ☑ Railroads
- ☑ Roads
- ☑ State/Province
- ☑ Water
- ☑ Wrecks & Obstns

Map Category Options.

For example, if you're simply taking a cross-country highway trip across several states, you can turn off categories such as rural roads and/or minor city streets. This should give you the navigation information you need at a smaller file size. However, when file size is no problem, most users prefer to include as much detail as possible. All the examples in our User's Guide section use the original factory default settings, which have all the categories turned on.

Even though a category is turned on, you may not see it on the Master Map because you have zoomed out too far. That's no problem. As long as the category is turned on, it will be included when you make your Map File, no matter what your zoom range is.
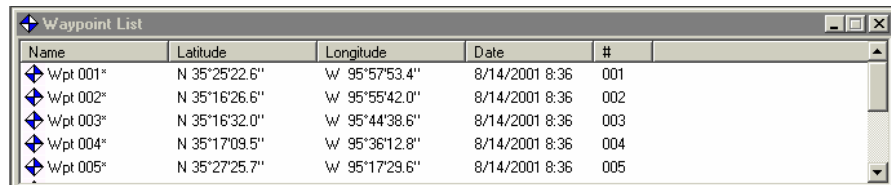
Tip:

Another command that works with category options to determine detail is the Detail Level Used option, under the **VIEW|VIEW MAP DISPLAY OPTIONS**

menu. (You don't need to make any changes there now, but after a little practice you'll want to see the entry *View Map Display Options* in the Help file's Command Reference for how this works.)

Waypoint List Window

This window shows the waypoints on the Master Map in a text list format. The symbol, name, latitude, longitude, date created and number are listed. The symbol, name, latitude and longitude can all be edited either on the Master Map or in the list window. To edit, right-click the waypoint. To open this window click **VIEW|WAYPOINT LIST**.
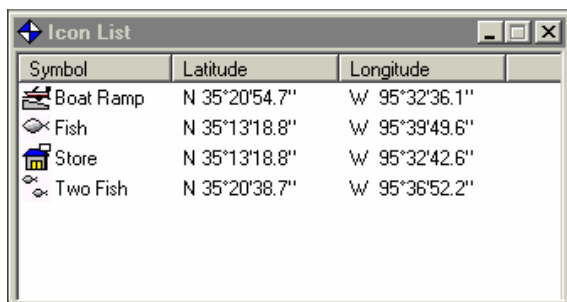
Name	Latitude	Longitude	Date	#	
Wpt 001*	N 35°25'22.6''	W 95°57'53.4''	8/14/2001 8:36	001	
Wpt 002*	N 35°16'26.6''	W 95°55'42.0''	8/14/2001 8:36	002	
Wpt 003*	N 35°16'32.0''	W 95°44'38.6''	8/14/2001 8:36	003	
Wpt 004*	N 35°17'09.5''	W 95°36'12.8''	8/14/2001 8:36	004	
Wpt 005*	N 35°27'25.7''	W 95°17'29.6''	8/14/2001 8:36	005	

Waypoint List Window

Icon List Window

This window shows the event marker icons on the Master Map in a text list format. The symbol, symbol label, latitude and longitude are listed. Except for the symbol label, these elements can be edited either on the Master Map or in the list window. To edit, right-click the icon. To open this window click **VIEW|ICON LIST**.

Symbol	Latitude	Longitude	
Boat Ramp	N 35°20'54.7''	W 95°32'36.1''	
Fish	N 35°13'18.8''	W 95°39'49.6''	
Store	N 35°13'18.8''	W 95°32'42.6''	
Two Fish	N 35°20'38.7''	W 95°36'52.2''	

Icon List Window

Route List Window

This window shows the routes on the Master Map in a text list format. The list contains the route name, number, total distance of the route and the number of waypoints that make up the route. To open this window click **VIEW|ROUTE LIST**.
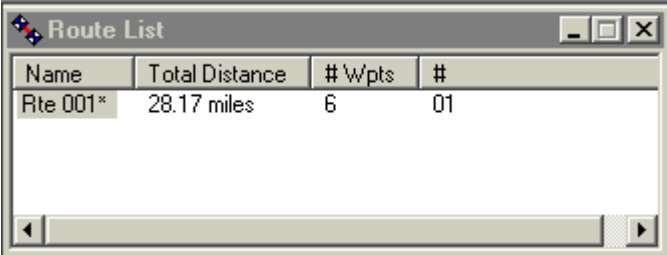
The route name can be edited in the window. To change the name:

1. Click on the name to highlight it.

2. Pause a moment; then click the name again. (This is *not* a regular double-click.)

3. Type a new *name* and press **ENTER**.

The waypoints in a route can be edited. Double-click the route name and you'll open the Route Waypoint List Window, which we describe next.

Route List Window

Route Waypoint List Window
(This is not shown when the program starts for the first time; a route must be created first. With the Route List window open, double-click on the route name to open the Route Waypoint List window.) This window shows the waypoints that make up a route on the Master Map, in a text list format. The symbol, name, leg length and position (in latitude and longitude) are listed. The symbol, name, latitude and longitude can all be edited either on the Master Map or in the list window. You can also insert and delete waypoints in a route. To edit, right-click the waypoint. To relocate a route waypoint on the Master Map by dragging:

1. Right-click on the waypoint and select **MOVE WAYPOINT**.

2. Move the mouse pointer with the waypoint to the new location.

3. Left-click to drop the waypoint in the new spot.

You can click **Esc** at anytime, while moving dragging the waypoint, to cancel the move. The waypoint remains where it was.

For more information on this function, see *Edit Route Waypoint* in the Help file's Command Reference.

Moving Around the Master Map
Pan Arrows
You can move around the Master Map display by clicking the Pan Arrow buttons, which appear at the north, south, east and west sides of the Master Map. For example, click the **RIGHT PAN ARROW** on the east side of the window to pan or move the Master Map to the left. Clicking on the Right Arrow reveals a portion of the map previously out of sight to the right of the screen. The other three arrows work the same way.

If you prefer, you can click the Pan Arrows on the **MAP NAVIGATION** toolbar.

Pan Arrows on toolbar

NOTE:
You can always use the Pan Arrow buttons to move around the Master Map, no matter what other commands may be activated.

Center Map
You can instantly move any location on the map to the window's center with the Center Map command. To center the map, click the **CENTER MAP** cross-hair button ⊕ Center Map at the left end of the toolbar. The mouse pointer turns into a cross-hair. ┼ Now click on the part of the Master Map you want centered in the map window.

Tip:
The mouse pointer's location in latitude and longitude is always shown in the status bar at the bottom of the MapCreate screen.

Zoom Area
There are several ways to zoom in and zoom out on the Master Map display. All are described in the Help file's Command Reference, but for now we'll describe just three. One fast and precise method uses the zoom area mouse pointer, activated by the Zoom Area button.

1. Click the **ZOOM AREA** button, ⊕ Zoom Area and then place the zoom area pointer on the map near the location you want to zoom in on.

2. Now click and drag the pointer. A selection box appears on the map. Drag the box until it covers the desired zoom area. Release the mouse button. MapCreate will zoom in so that the selected area fills the Master Map window.

At left, the zoom area pointer was used to drag a selection box around the word "Chicago." When the mouse button was released, the map jumped to a tighter, zoomed-in view of Chicago. (These figures show only the center portion of the Master Map.) You can find the exact zoom range in miles by checking the Zoom Range Window (see page 46 for more information).

NOTE:

> The Zoom Area button can only zoom in on a map. To zoom back out, use the Zoom Out button or the Z-Out button (see below). The Zoom Area button also acts like the Center Map button. With the command active, just click a spot to center it on the screen. You can also use the Zoom Area pointer to launch pop-up editing menus by right-clicking on waypoints and icons.

Zoom In/Zoom Out

Another common method for zooming uses the Zoom-In and Zoom-Out features. You have two ways to access these commands, so choose whichever is most convenient.

You can click the Zoom In and Zoom Out buttons on the Map Navigation toolbar.

Zoom buttons on the Map Navigation toolbar

Or you can click the Z-Out (zoom out) and Z-In (zoom in) buttons, located at the bottom right corner of the Master Map.
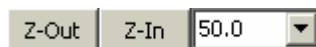
Zoom Out, Zoom In buttons, with Zoom Range Window.

Zooming in lets you see less territory, but more detail. Zooming out lets you see more territory, but less detail.

1. Click the **ZOOM IN** or the **Z-IN** button to enlarge the centered area of the map.

2. Click the **ZOOM OUT** or the **Z-OUT** button to shrink the map toward the cen-

ter.

Zoom Range Window

The current zoom range shows in the Zoom Range Window next to the Z-In button (see previous figure). The Zoom Range Window is the third common zoom tool. You can use this window in at least two ways:

1. Click the down arrow at the right of the box, and click on a preset range.

2. Click inside the box, type the desired range number and press **ENTER**.
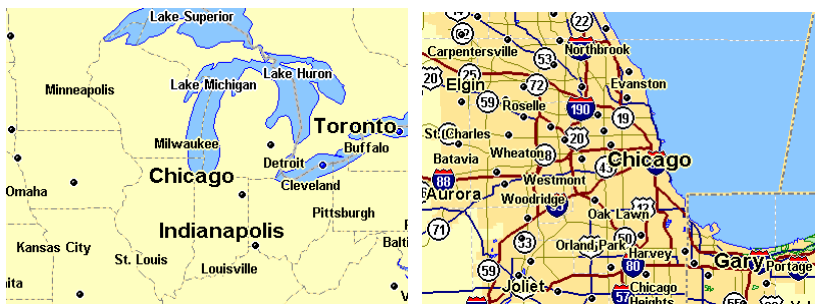
At left, Chicago is centered on the map with a range of 3000 miles; the figure on the right shows a zoom range of 200 miles. (These figures show only the center portion of the Master Map.)

NOTE:

You can always use the Zoom-In or Zoom-Out buttons, no matter what other commands may be activated.

Creating Rectangle Map Borders

Making a Map Border is the first step in creating a map for your Brunton Atlas. Here's how: (Refer as needed to the Toolbar section on page 35.)

1. Center the Master Map display on the area you want to include in your map. Click the **CENTER MAP** button , ⊕ Center Map and then click the cross-hair mouse pointer ┼ on the area you want centered.

2. If needed, click the **ZOOM IN** 🔵 Zoom In or **ZOOM OUT** 🔵 Zoom Out buttons so you can see the entire area that you want to draw a map border around.

3. Click the **DRAW MAP BORDERS** button , 🔖 Draw Map Borders and your mouse pointer becomes a pencil. 🔖

4. Move the mouse pointer above and to the left of the desired area.

5. Click and hold down the mouse button. While holding down the button, drag the pointer diagonally, down and to the right. A green border box appears. The size of the border box changes as you move your mouse.

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Labels on image: Handle Box, Map Border shown in green on screen., Mouse Pointer
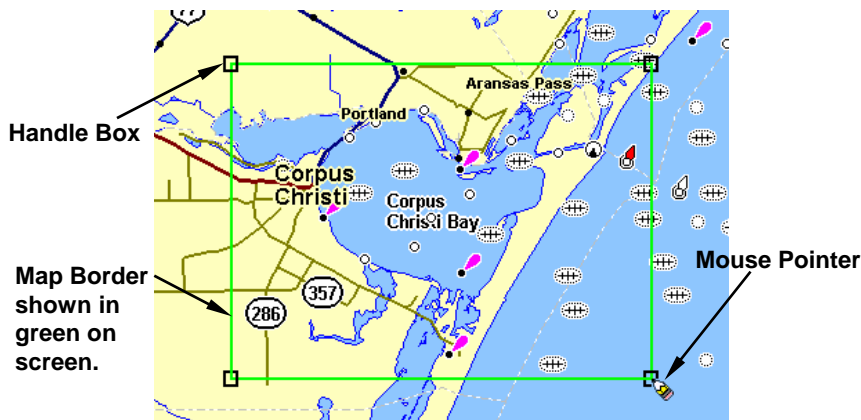
Click and drag to draw a Map Border around Corpus Christi Bay area.

6. When the green border surrounds the desired area, release the mouse button.

7. To stop the command, click the **CENTER MAP** button or the **ZOOM AREA** button. 🔍 Zoom Area

If you are satisfied with this map border and want to finish processing it for use in your GPS unit, you can jump ahead to "Creating and Saving a Custom Map," on page 52. However, you might want to check out the following two optional steps on estimating the size of the map, and saving the border as a Map Border File.

Estimate Map Size *(Optional)*
It's a good idea to make sure your map will fit on your card, so let's check it. Click the **ESTIMATE MAP SIZE** button , on the 🅰 Estimate Map Size Create Map toolbar. After a moment it will tell you your map's file size. If it fits the card, click **OK** to clear the message and proceed to either saving the border file or creating the map. If the map is too big, you must redraw your map border a little smaller. Click the **DELETE MAP BORDER** button , ✕ click on any green border line or corner handle box, then re-draw a smaller border box. Use the Estimate button to re-check the size until it is correct.
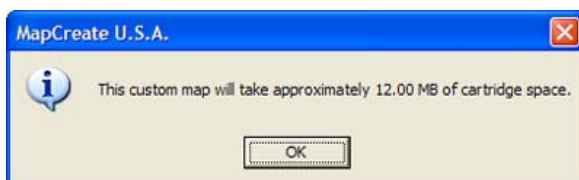
Click the OK button to clear the size message box from your screen.

Saving a Map Border File *(Optional)*
MapCreate 6.3 gives you the option of saving your border as a Map Border

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File. Saving a Map Border file is not necessary because you can create a map without saving the border, and you can even extract borders from finished Map Files.

However, this option is useful if you like to tinker with your map borders, and you don't want to start over each time you want to change a border. Here's how to save the border:

(Refer as needed to the "Toolbars" section, beginning on page 35.)

1. Click the **SAVE MAP BORDER** button 🔲 on the **FILE** toolbar. The Save As dialog box appears.
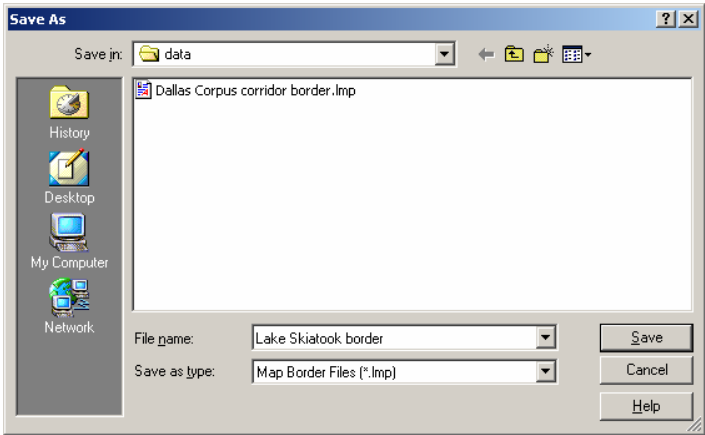
Save Map Border File dialog box.

2. Type a *name* in the File Name text box and click **SAVE**.

The file was placed in the "data" sub-folder located within the MapCreate folder on your hard drive. You can now start another map border (click the **NEW MAP BORDER FILE** button on the **FILE** toolbar) or you can close MapCreate and return another day. To open this border file later on, just click the **OPEN MAP BORDER FILE** button (on the **FILE** toolbar) and select the file name from the list.
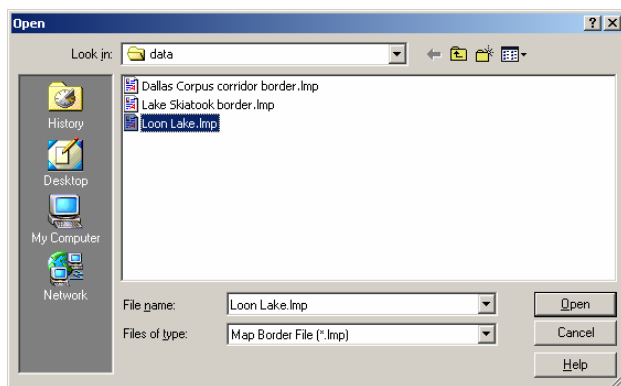
Open Map Border File dialog box.

With the border displayed on the Master Map screen, you're ready to process it into a map your GPS unit can use. If so, you can jump ahead to "Creating and Saving a Custom Map," on page 52.

MapCreate can also draw a polygon-shaped border useful for following an irregularly shaped route, lake or other geographic feature. These corridor maps are made with the Draw Corridor Map Borders command, and we tell you how in the next lesson.

Creating Corridor Map Borders

A corridor map lets you twist and turn your borders to enclose irregularly shaped geographic features. Here's how: (Refer as needed to the "Toolbars" section, beginning on page 35.)

1. Center the Master Map display on the area you want to include in your map. Click the **CENTER MAP** cross-hair button , and ⊕ Center Map then click the cross-hair mouse pointer on the area you want centered.

2. If needed, click the **ZOOM IN** ➕ Zoom In or **ZOOM OUT** ➖ Zoom Out buttons so you can see the entire area that you want to draw a map border around.

3. Click the **DRAW CORRIDOR MAP BORDERS** button , 🖉 Draw Corridor Map Borders and your mouse pointer becomes a pencil. 🖉

4. Move the mouse pointer to where you want your corridor map to begin.

5. Click and *release* the left mouse button to set the first anchor point. (The anchor point is represented by a handle box, which can also be grabbed later to relocate the border if you wish.)

6. As you move your mouse, you'll see a magenta border box appear. Move the mouse pointer in a straight line along your corridor's path until you need to change direction to follow the terrain. Click to set a second

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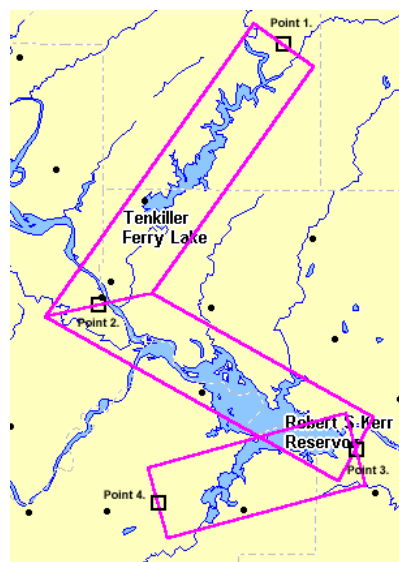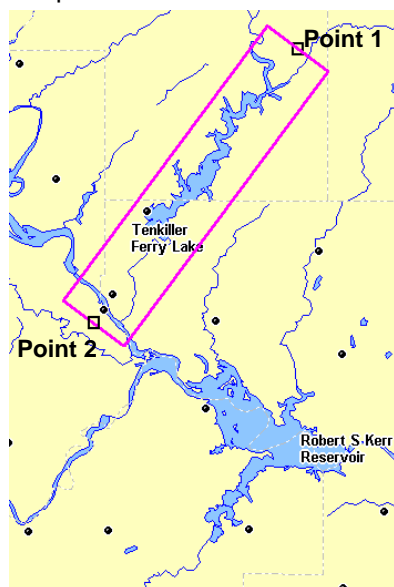
anchor point.

Corridor with first and second anchor points set, left.
Add a second segment to the corridor with a third point, right.

7. Now move the mouse pointer off at an angle, in the new direction needed to follow the irregular terrain. You'll see that the active corridor border box now rotates around the last anchor point you set. This lets you

move off in any direction, with the new segment of the corridor attached to the previous segments. Click to set your third anchor point.

8. Continue to click and add additional segments to your corridor until you reach your destination or have enclosed the desired area.

9. Click the right mouse button to stop drawing the corridor map. To close the map borders command, click the **CENTER MAP** button or the **ZOOM AREA** button.

NOTE: Finished corridor map.

Corridor width is adjustable. The default is 12 miles wide, and the setting reverts to the default each time MapCreate starts. Minimum width is approximately six miles and maximum width is approximately 400 miles.

To adjust corridor width, click **VIEW|MAP DISPLAY OPTIONS** and click the **MAP BORDERS** tab. Drag the Corridor Width slider bar to the left to narrow the corridor or drag it to the right to widen, then click **OK**. For more information, see the Help Command Reference topics *View Map Display Options Command* and its subtopics, *Map Borders Tab* and *Corridor Width*.

Tip:

If you need to start over, you can erase a corridor border box one segment at a time, or all at once. **To erase by segment, use one of these two methods:** (1) Click the **DRAW CORRIDOR MAP BORDERS** button. Move the pencil point over one of the small handle boxes that appear along the centerline of the corridor. Right-click on a handle box to erase that segment. (2) Click the **DELETE MAP BORDER** button and then click one of the small handle boxes.

To erase an entire corridor border at once, choose one of the following methods: Click **FILE|NEW|NEW MAP BORDER FILE** or click the **NEW MAP BORDER FILE** button (on the **FILE** toolbar). Then click the **YES** button on the Clear All Borders dialog box. This will erase all corridor borders displayed on the Master Map.

Edit Corridor Borders

It's easy to edit a corridor map. To add a segment, use the Draw Corridor Map Border button and simply click inside an existing segment to insert a new handle box. Move the handle where you want the corridor to go and click to anchor it there. To reposition a segment, click on a handle box to grab it, move the handle to the new location, then click to anchor it there.

If you're satisfied with this map border and want to finish processing it for use in your GPS unit, move on to the next step, where you will create and save your map. (If you wish, you can estimate the map size and save the

map border for future use. These optional steps were discussed in the previous segment on Creating Rectangle Map Borders.)

Creating and Saving a Custom Map

Once you have a Map Border, MapCreate can use it to make a Custom Map File for your Brunton Atlas unit. Before you can proceed, however, your MMC or SD card must be registered with MapCreate. This is a one-time step for each of the five cards you are allowed to use with MapCreate. This card registry is a security requirement described in greater detail on page 8.

If a card isn't registered, when you try to create the map, MapCreate first walks you through card registration, then creates the map. (This is described fully in the Quick Reference, which begins on page 2.) If you wish, you may manually register a new card ahead of time by using the Card Registry Command, described in the Help file's Command Reference section.

The following instructions assume you have already registered your memory card, and you have used the Estimate Map Size button (described on page 47) to make sure the map will fit the card. Here's how to finish making your map: (Refer as needed to the "Toolbars" section, beginning on page 35.)

1. Create a map border or open a Map Border File by clicking the **OPEN MAP BORDER FILE** button on the **FILE** toolbar.

2. Click the **CREATE MAP** button . A card encryption and registration message appears. Make sure you have a card in the card reader and click **OK**.
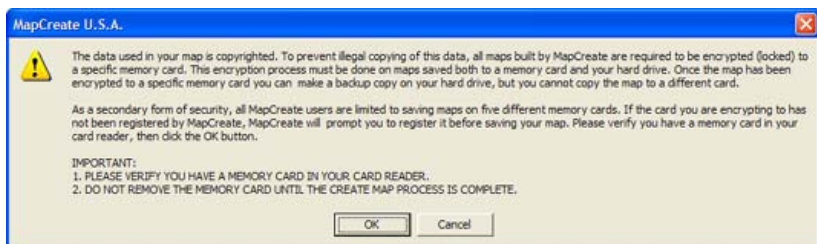

Read the message, and then click OK to continue.

3. A progress dialog box will appear while MapCreate extracts the necessary information and builds the Map File.
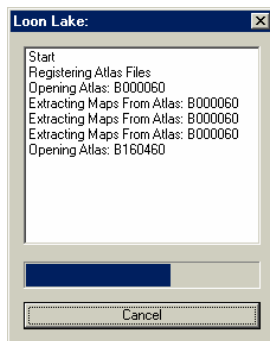
Building Map Progress dialog box.

4. When the map has been built, the Save As dialog box appears. Note that the file size of the map is shown in the title bar and in the status bar at the lower left corner of the MapCreate screen. In the example below, the size is approximately 1.94 MB.

Type a *name* in the **FILE NAME** text box and click **SAVE**.
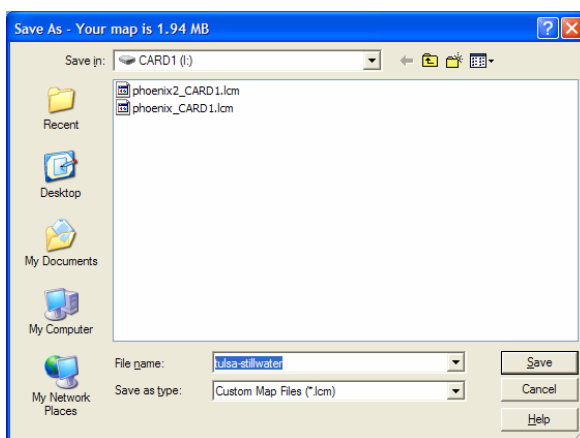
Save As dialog box showing map size in title bar

Congratulations, you've made your first Map File! Your map was placed directly on your MMC or Secure Digital card. If you wish to keep a copy of the file on your computer, use Windows Explorer to copy the Map File to the "data" sub-folder located within the MapCreate folder on your hard drive.

Tips:

- If you don't plan to change this map later, the map border or Map Border File that you created it from can now be deleted if you wish.

- If you are having trouble saving your Map File to your memory card, your MMC may need to be reformatted. For more information on this, refer to the MMC format note on page 12 or the instruction sheet that

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came with the card reader.

Refer to your GPS unit's manual for instructions on inserting the MMC. When the GPS unit is turned on, it will automatically display your MapCreate custom map. Now you're ready to hit the road, but if you'd like to add a little GPS navigation information to your unit, read the following lessons.

Creating a Waypoint

Waypoints are the building blocks of GPS navigation. A waypoint is simply an electronic "address," based on the latitude and longitude of a position on the earth. MapCreate lets you set a waypoint and mark it with a symbol, name or number. This appears on the Master Map and eventually on the map displayed on your GPS unit's screen.

With your GPS, you can navigate to a waypoint. Waypoints can be used to mark a favored spot or to mark something to avoid such as a dead-end road or a boating hazard on a lake. Waypoints linked together in a sequence allow you to navigate along a pre-planned route. In the field, your GPS unit can also be used to set waypoints. You can bring these field-generated waypoints into MapCreate for storage and use on later trips.

Creating a waypoint on the Master Map is easy. Here's how: (Refer as needed to the "Toolbars" section, beginning on page 35.)

1. Center the Master Map display on the area where you want to set the waypoint. Click the **CENTER MAP** cross-hair button , then ⊕ Center Map click the cross-hair mouse pointer on the ╬ area you want centered.

2. If needed, click the **ZOOM IN** or 🔵 Zoom In **ZOOM OUT** 🔵 Zoom Out buttons so you can see enough detail to accurately place the waypoint.

3. Click the **CREATE WAYPOINTS** button ◆ on the GPS Data toolbar, and your mouse pointer becomes an arrow with a waypoint symbol and the abbreviation "Wpt."

4. Move the mouse pointer so that the arrow point is where you want the waypoint. Click to set the waypoint. Move your mouse away, and you can see the waypoint, with the default name of "Wpt 001."
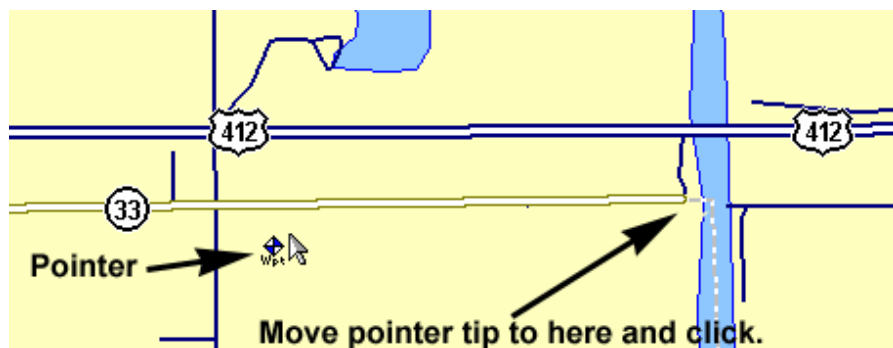
Create a waypoint: First, find the location on the Master Map. The longer arrow shows the location of a public hunting area parking lot.
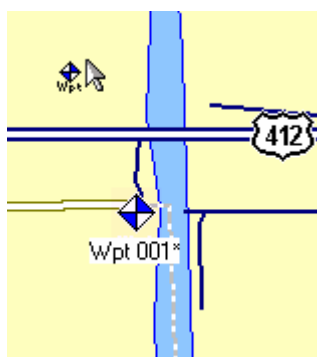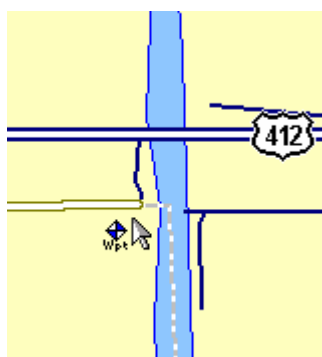
Move the pointer arrow tip over the location (left) and click to create the waypoint. The waypoint appears (right) with the default waypoint symbol and name, both of which can be changed. These figures were taken from a zoom range of 4.05 miles. It looks as if the waypoint is on the road, but zooming in closer would show the waypoint is actually south of the road, just where the pointer tip placed it.

5. Relocate your mouse pointer and click to create additional waypoints as needed.

6. To close the Create Waypoints command, press **Esc** (the Escape key) or click the **CENTER MAP** or **ZOOM AREA** buttons.

Tips:

- If you need to erase or delete a waypoint, move the cross-hair pointer or the zoom area pointer over a waypoint and right-click. In the pop-up menu, click **DELETE WAYPOINT**.
- If you want to reposition the waypoint, move the cross-hair pointer or the zoom area pointer over a waypoint and right-click. In the pop-up menu, click **MOVE WAYPOINT**, and the pointer grabs the waypoint. Move it to the new position and click to set it there.

- There are other ways to delete waypoints, and you can also change the symbol, name and location. For instructions on these functions, along with other tips, see *Create Waypoint*, *Delete Waypoint*, *Insert Waypoint* and *Edit Waypoint* in the Help file's Command Reference section.

If this is all the GPS information you need for now, skip ahead to the lesson "Saving a GPS Data File" on page 61. Remember, to get the waypoints you just made into your GPS unit, they must be saved in a GPS Data File. But, if you want to add some icons or a route to the GPS Data File, check out the next two lessons.

Creating an Icon

Icons are graphic symbols used to mark some location, personal point of interest or event. These features are also called event markers, or event marker icons. Event marker icons don't store as much information as waypoints. You can't use a menu to navigate to them as you can with waypoints, and you can't change their names. But you can change their symbols. In fact, waypoints and event marker icons share the same set of symbols, but they are two different types of GPS data with different capabilities.

NOTE:

Until you change the default symbol, any icon you create will look like a yellow and red waypoint, but without a name . For ◆ this lesson, we will stick with the default, but if you want to change the symbol, refer to *Edit Icon* in the Help file's Command Reference.

Event marker icons are a handy way to mark a spot when you don't need to save or edit much information about the location or event. Creating an icon on your map is as easy as setting waypoints. Here's how: (Refer as needed to the "Toolbars" section, beginning on page 35.)

1. Center the Master Map display on the area where you want to set the icon. Click the **CENTER MAP** cross-hair button , and ⊕ Center Map then   click the   cross-hair ┼ mouse pointer on the area you want centered.

2. If needed, click the **ZOOM IN** 🟢 Zoom In or **ZOOM OUT** 🔵 Zoom Out buttons so you can see enough detail   to accurately place the icon.

3. Click the **CREATE ICONS** button ◆ on the GPS Data toolbar, and your mouse pointer becomes an arrow with a red and yellow icon symbol.   ▶◆

4. Move the mouse pointer so that the arrow point is where you want the icon. Click to set the icon. Move your mouse away, and you can see the icon.
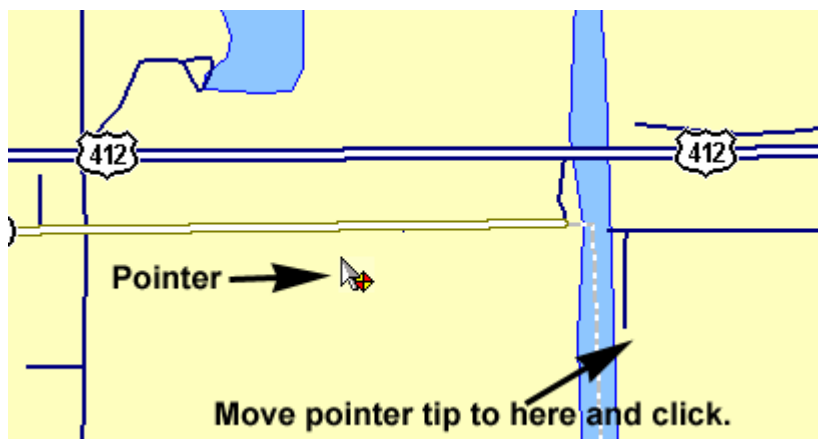
Create an icon: First, find the location on the Master Map. The bottom arrow shows the location of a public boat ramp on this river.
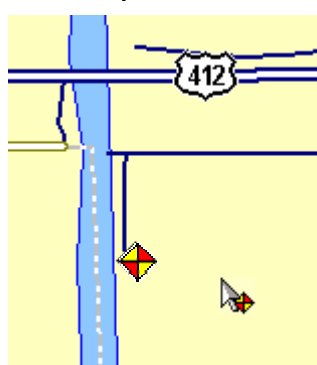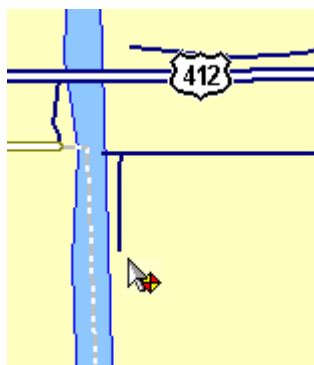
Move the pointer arrow tip over the location (left) and click to create the icon. The icon appears (right) with the default waypoint symbol but no name. To change this symbol to the boat ramp symbol, see *Edit Icon* in the Help file's Command Reference.

5. Relocate your mouse pointer and click to create additional icons as needed.

6. To close the Create Icons command, press **Esc** (the Escape key) or click the **CENTER MAP** or **ZOOM AREA** buttons.

Tips:

- If you need to erase or delete an icon, move the cross-hair pointer or the zoom area pointer over the icon and right-click. In the pop-up menu, click **DELETE ICON**.

- If you want to reposition an icon, move the cross-hair pointer or the zoom area pointer over the icon and right-click. In the pop-up menu, click **MOVE ICON**, and the pointer grabs the icon. Move it to the new posi-

tion and click to set it there.

- There are other ways to delete icons, and you can also change the symbol and location. For instructions on these functions, along with other tips, see *Create Icon*, *Delete Icon*, *Insert Icon* and *Edit Icon* in the Help file's Command Reference section.

If you don't want to plan a route this trip, skip ahead to the lesson "Saving a GPS Data File" on page 61. But don't forget, planning a route is one of MapCreate's coolest capabilities. If you're ready for some real navigating with routes, read on.

Creating a Route

A route is a series of waypoints, linked together in an ordered sequence, that's used to mark a course of travel. You can visualize a route as beads on a string, or, think of it as the mile marker signs posted at intervals along U.S. interstate highways.

Routes are powerful tools for planning and then navigating your journeys. With your GPS receiver, you can automatically navigate from one waypoint to the next along your intended course. You can start at either end of a route, or even begin navigation in the middle of a route.

You can informally group routes into two broad categories, based on the terrain and type of travel. On water, in the air or just hiking cross-country, you can generally travel in a simple, straight line from waypoint to waypoint (barring obstacles, of course.) The Global Positioning System was originally developed by the U.S. military for this type of routing. It's suitable for airplanes, ships and soldiers in the field. MapCreate and your GPS unit connect all route waypoints with straight lines.

The other route style involves navigating along a road, highway or other winding pathway. When your vehicle has to follow the twists and turns of the pavement, you can't really travel in a straight line from waypoint to waypoint.

Since the legs of all GPS routes are based on straight lines between waypoints, setting up a curvy highway route takes a little more time and practice than our Quick Start format allows. We'll save those details for the *Create Route* entry in the Help file's Command Reference section.

For this lesson, we'll use an example based on a simple off-shore fishing route. Just remember: the techniques for making a route are the same, no matter what sort of travel pattern you're planning. Here's how it works: (Refer as needed to the "Toolbars" section, beginning on page 35.)

1. Center the Master Map display on the area where you want to begin your route. Click the **CENTER MAP** cross-hair button then click ⊕ Center Map
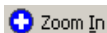
+

⊕ Zoom In

the cross-hair mouse pointer on the area you want centered.

2. If needed, click the **ZOOM IN** or **ZOOM OUT** buttons so ⊖ Zoom Out you can see enough detail to accurately place the route waypoints.

Tip:
> As you move along your intended course, you may need to pan the Master Map and periodically zoom in and out to see where to place route waypoints, and where you are going next. The pan and zoom buttons will always work, even when the **CREATE ROUTE** command is active. This way, you don't have to turn off Create Route just to move the map.

3. Click the **CREATE ROUTE** button ⚓ on the GPS Data Toolbar. Your mouse pointer becomes an arrow with a route symbol , ⚓▷ two waypoints connected by a magenta route line.

4. Move the mouse pointer so that the arrow point is where you want to start your route. Click to set the first waypoint. Move your mouse away and you can see the waypoint. A straight magenta route line now runs from Waypoint 001 to your mouse pointer like a rubber band, showing you a route is under construction.
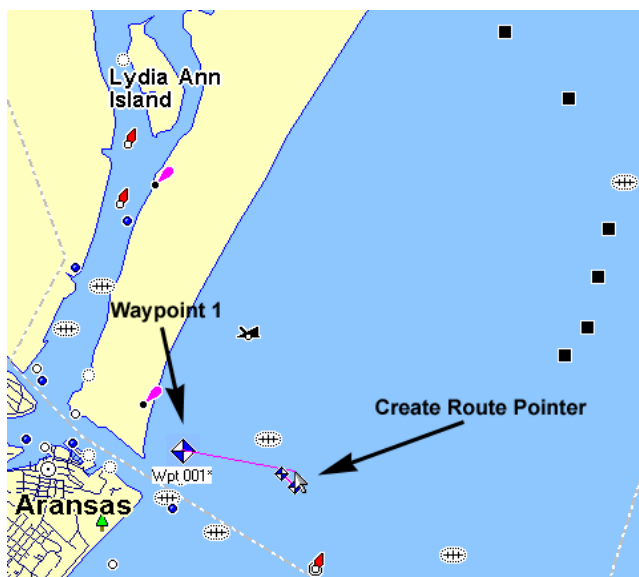

Click to set the first waypoint in a route. This example will show the route of a fishing boat from Port Aransas, Texas, to some oil drilling platforms and a wreck in the Gulf of Mexico, then back to port.

5. You can move off in any direction and the next waypoint will be linked in a straight line to waypoint 1. Relocate your mouse pointer along your intended route and click to create additional route waypoints as needed. Ba-

sically, you will set a new waypoint every time you need to change direction.

6. To close the **CREATE ROUTE** command, right-click or press **Esc**.
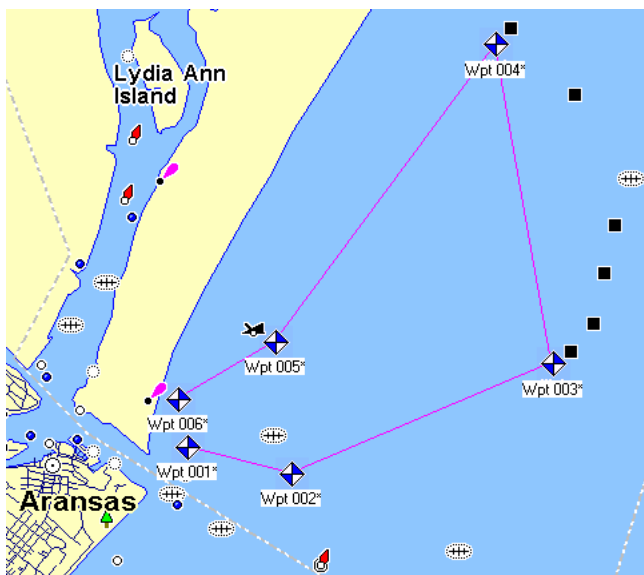
Finished route with six waypoints. Notice the straight line-of-sight line connecting the waypoints that make up the route. The route segment from one waypoint to another is called a leg; this route has five legs. Waypoints 3 and 4 are near oil drilling platforms and waypoint 5 is near a visible wreck.

Tips:

- Routes can be edited in many ways, but those steps involve several other commands that we will discuss only in the Help file's Command Reference section. You can delete an entire route, delete a waypoint from a route, insert a waypoint into a route or relocate a waypoint in a route. To read more about it, see these entries in the Help file's Command Reference: *View Route List*, *View Route Waypoint List*, *Edit Route*, *Edit Route Waypoint*, *Delete Route*, *Delete Route Waypoint*, *Insert Route* and *Insert Route Waypoints*. But, if you're in a hurry to change your route, read the following two tips.

- You can completely erase a route by deleting each waypoint, one after the other. Click the **CENTER MAP** button (or **ZOOM AREA** button), move the cross-hair pointer over a route waypoint and right-click. In the pop-up menu, click the **DELETE WAYPOINT** command. MapCreate erases the waypoint and the magenta line linking the waypoint to the route. To erase the route legs but leave the waypoints: open the Route List window (shortcut key **F3**), right-click the route name, and in the pop-up

menu click **DELETE ROUTE**.

- You can easily reposition a route waypoint with your mouse. Just move the cross-hair pointer or the zoom area pointer over the waypoint and right-click. In the pop-up menu, click **MOVE WAYPOINT**, and the pointer grabs the route waypoint. Move it to the new position and click to set it there

Now that you've created all the GPS information you want, you need to prepare it for use in your GPS unit. We'll do that in the next lesson, "Saving a GPS Data File."

Saving a GPS Data File

GPS Data Files (sometimes called "user files") can contain any combination of GPS information, including waypoints, event marker icons, routes and trails. MapCreate and your GPS unit store all their GPS data in this same file format. This makes it easy to move GPS data back and forth between MapCreate and your GPS unit. Here's how: (Refer as needed to the "Toolbars" section, beginning on page 35.)

1. With some type of GPS data displayed on the screen, click the **SAVE GPS DATA FILE** button on the ◈ File toolbar. The Save As dialog box appears.
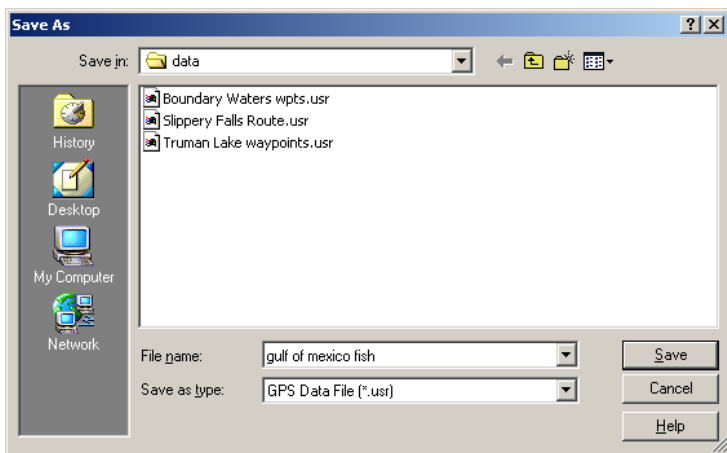
Save GPS Data File dialog box.

2. Type a *name* in the File Name text box and click **SAVE**.

Congratulations, you've made your first GPS Data File! MapCreate saved the file to the program's default storage folder, which is:

C:\Program Files\LEI\MapCreate\Data. Now you can use Windows Explorer to copy or move the file to your MMC card. Remember, Windows treats

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your card reader like a removable disk drive, so copying a GPS Data File to the MMC card is like copying a file from the hard drive to a floppy disk.

Tip:

You also have the option of saving the GPS data file directly to the card. When the Save As dialog box appears, select the card reader's drive letter in the Save In box before you click Save. For help transferring files with Windows Explorer, click **START|HELP** and in the Windows Help program, look for the topics "copying files" or "moving files."

You can now start another GPS Data File (click the **NEW GPS DATA FILE** button) or you can close MapCreate and return another day. To open this or another GPS Data File later on, just click the **OPEN GPS DATA FILE** button and select the file name (and its location) from the list, then click **OPEN**.
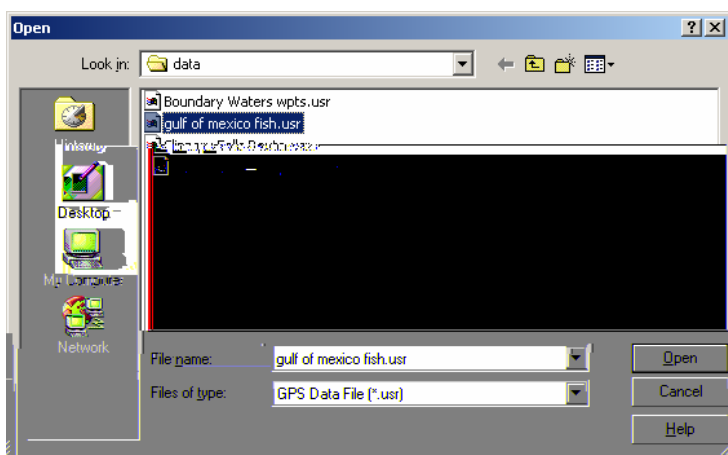
Open GPS Data File dialog box.

Moving GPS Data Files Between Computer and Unit

With that GPS Data File copied to the MMC, you're ready to load the file into your GPS unit. Refer to your GPS unit's manual for instructions on inserting the MMC. Then look in the unit's manual for the topic "*Transfer Custom Maps and GPS Data Files.*" This is usually located in the Advanced Mode Operation section of the hand-held units, and in the Basic GPS Operations section of gimbal-mounted units. Those instructions will tell you how to load the GPS Data File into your unit's memory so that the waypoints and other items appear on the unit's Map Page display.

The same instructions explain how make your unit save waypoints and other data as GPS Data Files. After the unit saves its own GPS data to the MMC card, you can place the MMC in the card reader, copy *that* GPS Data File to *C:\Program Files\LEI\MapCreate\Data* and open the file in MapCreate.

Now you know all the basics for getting custom maps *and* GPS data into your GPS unit — you're ready to travel!

You don't need them at this moment, but there are two more optional operations you ought to hear about. One is making a corridor map from a route. You can use that method instead of drawing corridor border boxes manually with the mouse.

The other operation is creating a route from a trail. You can't even practice that one yet; you need to get out there with your GPS and bring back a trail to play with. Just follow the instructions in your GPS manual to save a trail from your travels, and save the trail in a GPS Data File. Open the data file in MapCreate, then refer to the lesson "Creating a Route From a Trail" on page 65.

Creating a Corridor Map From A Route

MapCreate can use a route you've made to automatically create a corridor map border. Using the Draw Borders Around Route command is fast, and it helps control the size of your Custom Map. Here's how it works:

1. Create a route or open a GPS Data file containing a route. (To open a GPS Data File, click **FILE|OPEN|OPEN GPS DATA FILE**.)

2. Open the Route List Window: click **VIEW|ROUTE LIST**.

3. Right-click on the route name. In the pop-up menu, click the **DRAW BORDERS AROUND ROUTE** command.
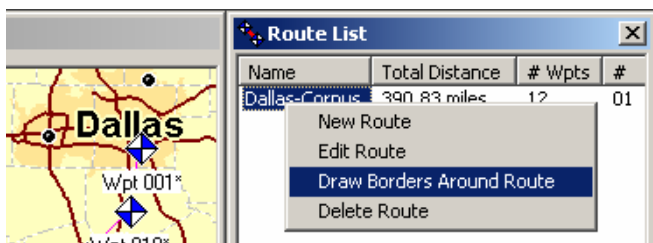
When you right-click a route name in the Route List Window, a pop-up menu appears. Click on Draw Borders Around Route to generate the border. In this example, we are creating a corridor map border for a route from Dallas to Corpus Christi, Texas.

MapCreate draws a corridor map border following the route. See the illustrations below, showing the route before and after the command is performed.

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Route from Dallas to Corpus Christi, Texas (left) and the corridor map created automatically from the route (right).

You can save this as a Map Border File and then create a Map File, or create a Map File without saving the border. (Click the **SAVE MAP BORDER** button, on the **FILE** toolbar, and then click the **CREATE MAP** button.)

Tip:

You can control the width of any corridor map. Click **VIEW|MAP DISPLAY OPTIONS**, and the Map Display Options dialog box appears.
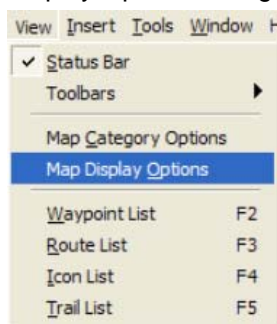
Click Map Display Options to bring up the

Click on the **MAP BORDERS** tab. Near the bottom of the box, drag the Corridor Width slider bar left to decrease or right to increase the width of your corridor. This allows you to make very narrow corridors, which in turn results in conveniently small Map File sizes.

Corridor Width slider bar
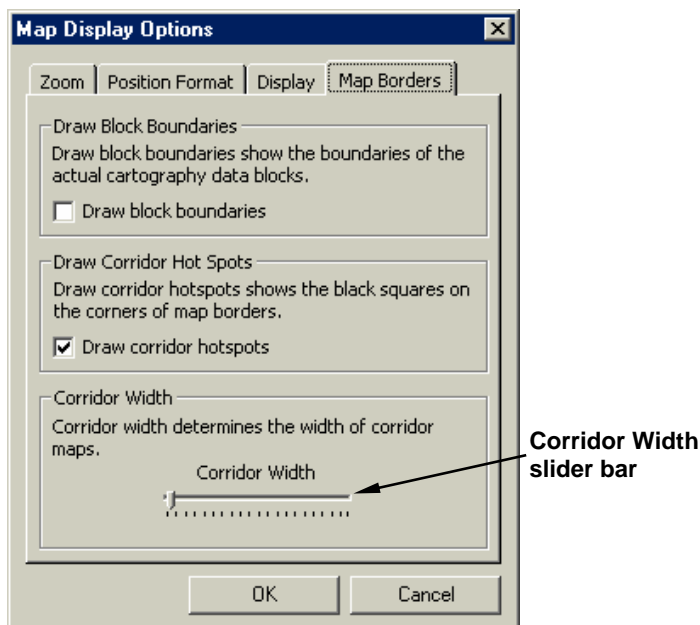
Map Borders tab in the Map Display Options dialog box. Drag the Corridor Width slider bar to the left to narrow corridor width. Drag the slider bar to the right to widen corridor width.

Creating a Route From a Trail

A trail is a line drawn on the map by your GPS unit as you travel. It's a record of the path you've taken, showing where you've been. This feature is also called a plot trail. In the field, the trail will extend from your present position back to where you began recording the trail. Your GPS unit records thousands of position points to show every twist and turn you've taken on your journey.

To get a trail into MapCreate, you must record a trail in your unit, then save the trail in a GPS Data File. Copy the data file from the MMC to the MapCreate data folder. When you open the GPS Data File, MapCreate will display the trail as a green line on the Master Map.

MapCreate can use a GPS plot trail to create a route for use on a repeat trip. Your GPS unit can navigate the new route, making it easy to retrace

the path you took. You can even share the information with friends. Using the Create Route From Trail command is a snap. Here's how you do it:

1. Open a GPS Data file containing a trail. (To open a GPS Data File, click **FILE|OPEN|OPEN GPS DATA FILE**.)

NOTE:
> GPS Data Files with relatively long trails take a few moments to open. Please be patient when you open a data file containing a long trail. Once the trail information has been processed, the remainder of the data file will open very quickly.
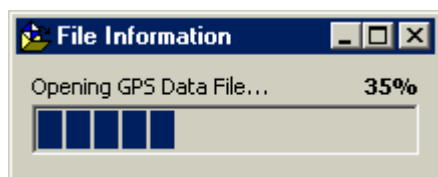

GPS Data File open progress box.
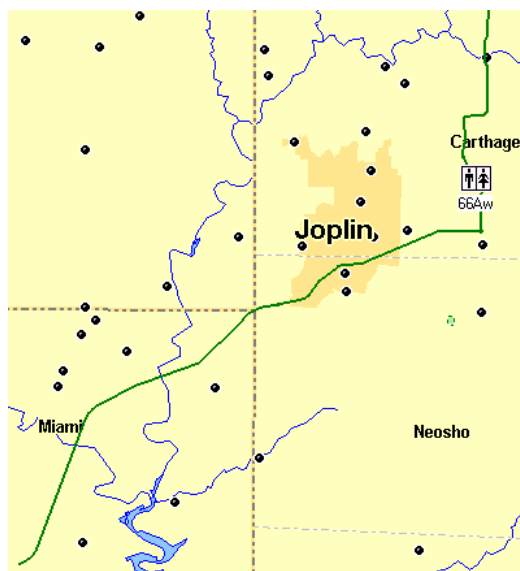
This example shows a portion of Trail 2, recorded during a business trip from Afton, Oklahoma to Kansas City, Missouri. The trail appears as a green line on the Master Map. It follows Interstate 44 to Carthage, Missouri, then Highway 71 north toward Kansas City. For easier viewing, roads, highways and other features have been turned off.

2. Open the Trail List Window: click **VIEW|TRAIL LIST**.

3. Open the Route List Window: click **VIEW|ROUTE LIST**.

4. Right-click on the trail name. In the pop-up menu, click the **CREATE ROUTE FROM TRAIL** command.
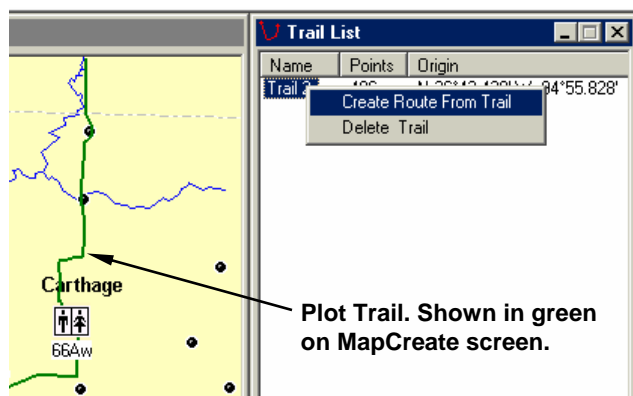
The Create Route From Trail pop-up menu appears when you right-click a trail name in the Trail List Window. Notice the absence of waypoints along the trail.

MapCreate converts the green trail line into a magenta route line with red waypoints. It does this by transforming thousands of position points in this trail to 25 route waypoints. See the illustration below, showing the trail and route before and after the command is performed.
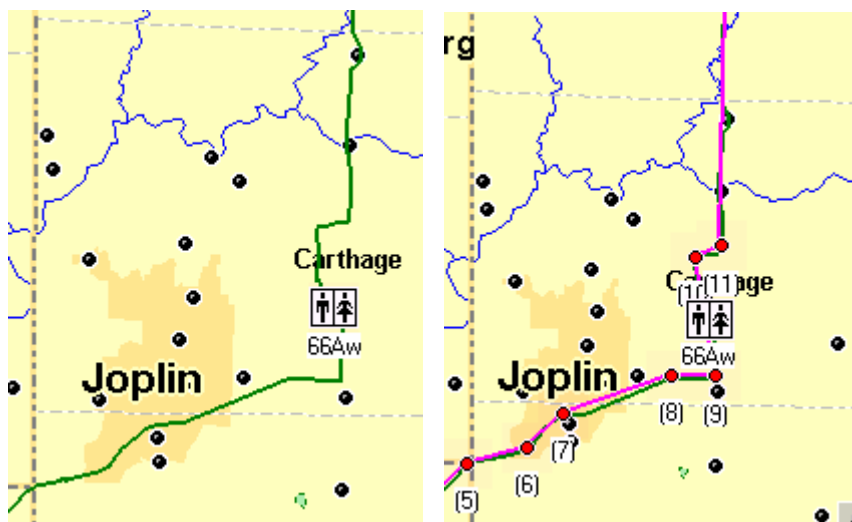
Trail segment through Joplin before conversion to a route (left) and the route created automatically from the trail (right). In the right image, the green trail and the magenta route are both visible. Note the numbered waypoints appearing along the route.

You can save this as a different GPS Data File. (Click the **SAVE GPS DATA FILE** button on the **FILE** toolbar.)

Appendix 1: MapCreate Command List

Complete documentation on all MapCreate commands is available in the program's Help File. To access Help and its Command Reference section, press F1. An example entry from the Command Reference (for the Help Command) appears at the end of this command list.

About MapCreate
Arrange Icons
Arrange Windows
Auto Arrange Windows
Card Registry
Cascade Windows
Center Map
Close All Windows
Clear Map Borders
Create Custom Map
Create Icons
Create Route
Create Route From Trail
Create Waypoints
Delete
Delete Icon
Delete Map Border
Delete Route
Delete Route Waypoint
Delete Trail
Delete Waypoint
Draw Borders Around Route
Draw Corridor Map Borders
Draw Map Borders
Edit Icon
Edit Route
Edit Route Waypoint
Edit Waypoint
Estimate Map Size
Exit
Export Route
Export Waypoint List
Help Topics
Import Map Borders From File
Import Route
Import Waypoint List
Insert Icon
Insert Route
Insert Route Waypoints
Insert Waypoint
New GPS Data File
New Map Border File
Open GPS Data File

Open Map
Open Map Border File
Print GPS Data
Print Map
Printer Setup
Restore Original Settings
Save All
Save GPS Data File
Save GPS Data File As
Save Map Border File
Save Map Border File As
Tile Windows Horizontally
Tile Windows Vertically
View Icon List
View Map Category Options
View Map Display Options
    Data Display Options
      Detail Level Used
      GPS Data
      Default Symbol
    Map Borders Options
      Draw block boundaries
      Draw corridor hot spots
      Corridor Width
    Position Format Options
    Zoom Options
      Zoom Range Units
      Map Zoom Change
View Route List
View Route Waypoint List
View Status bar
View Toolbar
View Trail List
View Waypoint List
Zoom In / Zoom Out

Help Topics Command

Menu: **HELP**
Submenu: n/a
Menu Command: **HELP TOPICS**
Menu Command Sequence: **HELP|HELP TOPICS**
Hot Key Sequence: **Alt+H|H**
Shortcut Key(s): **F1**
Toolbar button: n/a

The Help Topics command opens the on-line Help system in your default web browser. Our help information is in HTML format, but it runs from the CD or your hard drive, not from the Internet.

Using the Command

The Help system contains the Quick Reference tutorial material (from the instruction manual) and a Command Reference, which documents every command in MapCreate.

To open the Help system, choose the **HELP TOPICS** command.

You navigate through the help information just as you would any other web site, using the clickable hyperlinks to move around.

Searching Help

Once you have opened a help document, you can search it for the information you need.
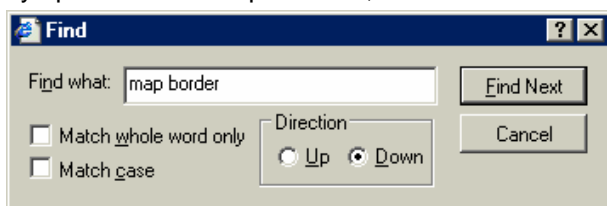
Internet Explorer browser:

1. Click somewhere on the help page you intend to search. This makes sure your browser will search the correct page.

2. Click **EDIT|FIND (ON THIS PAGE)** or use the shortcut keys **Ctrl+F** to begin your search.
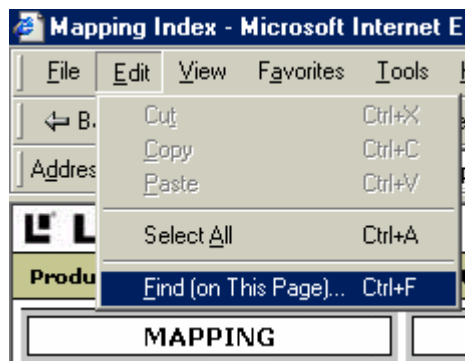
Use Internet Explorer's Find command to search Help documents.

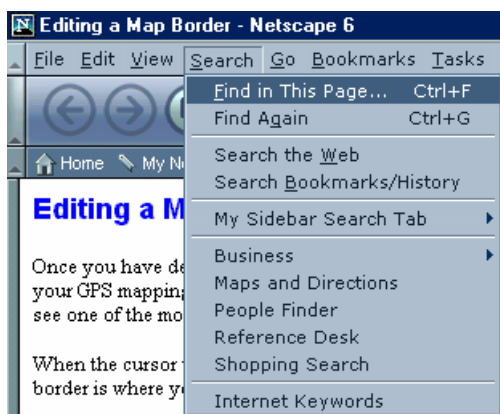3. In the **FIND WHAT:** box, type the *term*, *phrase* or *command* you are looking

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for, adjust any options such as up or down, then click **FIND NEXT**.

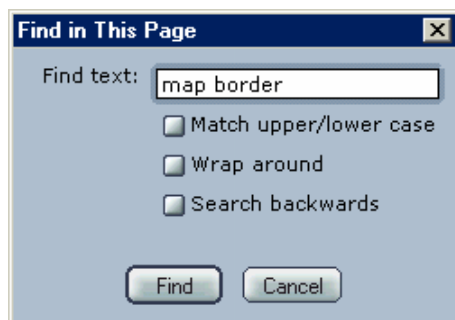**Search a Help document for the term "map border."**

Netscape 6 browser:

1. Click somewhere on the help page you intend to search. This makes sure your browser will search the correct page.

2. Click **SEARCH|FIND IN THIS PAGE** or use the shortcut keys **Ctrl+F** to begin your search.

Use Netscape's Find command to search Help documents.

3. In the **FIND TEXT:** box, type the *term*, *phrase* or *command* you are looking for, adjust any options such as search backwards, then click **FIND**.

Search a Help document for the term "map border."

Notes

Appendix 2: Map Category List

This list contains the different categories of mapping information available in MapCreate 6. These categories and their subcategories can be turned off or on. Only those categories turned on (displayed in the Master Map) will be included in Custom Map Files for your GPS unit. See Appendix 3 for symbols used to represent these items. POI stands for Point of Interest. U.S. and Canadian category groupings are listed here. Specific categories for your area may differ slightly, but the patterns will be similar.

U.S. Categories

Airports
   Runways
   Symbols
Cities
   Community Names
   Names
   Subdivision Names
   Urban Areas

Countries
   Boundaries
   Names

County/Parish
   Boundaries

Highway Exits
   Exits
   Information Centers
   Parking Areas
   Picnic Areas
   Rest Areas
   Scenic Areas
   Service Areas
   Toll Plazas
   Welcome Centers
   Weigh Stations

Highways
   US
   International Minor
   International Major

   Interstate Symbols
   Interstate
   State
   State Symbols
   US Symbols

Landmarks
   Buildings
   Cemeteries
   Fire Stations
   Land Features
   Libraries
   Mines
   Other
   Schools
   Shopping Center
   Summits
   Towers
   Trail Names

Marine Navaids
   Major
   Minor
POI-All Others
   Airports
   Attractions
   Auto Parts/Service
   Banks/Financial
   Bars/Nightclubs
   Entertainment
   Fishing/Hunting
   Food Stores
   Gasoline
   Government

Marine Services
Medical Service
Museums/Zoos
Postal Service
Places of Worship
RV Parks/Services
Shopping
Sporting Goods/Wear
Sports
Transportation
Universities/Schools

POI-Lodging
Bed & Breakfast
Cabins
Camps/Campgrounds
Hotels/Motels
Resorts
RV Parks

POI-Restaurants
Asian
Banquet Rooms
Barbecue
Coffee Shops
Delis
Fast Food Chains
Ice Cream
Italian
Mexican
Miscellaneous
Pizza
Sandwiches
Seafood
Steak Houses
Public Lands
National Forests
National Park Service
Park Symbols
Railroads
Roads
Major City
Major City Names
Minor City Names

Minor City
Rural Names
Rural

State/Province
Boundaries
Names

Water

Canals/Streams
Canals/Stream Names
Lake/Rivers
Lake/River Names
Ocean/Seas
Ocean/Sea Names
Other Names
Wrecks & Obstructions

Canadian Categories
Airports
Runways
Symbols
Cities
Community Names
Names
Subdivision Names
Urban Areas

Countries
Boundaries
Names

County/Parish
Boundaries

Highway Exits

Exits
Information Centers
Parking Areas
Picnic Areas
Rest Areas

Scenic Areas
Service Areas
Toll Plazas
Welcome Centers
Weigh Stations

Highways

US
International Minor
International Major
Interstate Symbols
Interstate
State
State Symbols
US Symbols

Landmarks

Buildings
Cemeteries
Fire Stations
Land Features
Libraries
Mines
Other
Schools
Shopping Center
Summits
Towers
Trail Names

Marine Navaids

Major
Minor

Points Of Interest

Airports
Auto Parts/Service
Banks
Bars/Nightclubs
Entertainment
Fishing/Hunting
Food Stores
Gasoline
Government
Hardware

Libraries
Lodging
Marine Services
Medical Service
Museums/Zoos
Postal Services
Restaurants
RV Parks/Services
Shopping
Sporting Goods/Wears
Sports
Tours
Transportation
Universities/School

Public Lands

National Forests
National Park Service
Park Symbols

Railroads

Roads

Major City
Major City Names
Minor City Names
Minor City
Rural Names
Rural

State/Province

Boundaries
Names

Water

Canals/Streams
Canals/Stream Names
Lake/Rivers
Lake/River Names
Ocean/Seas
Ocean/Sea Names
Other Names

Wrecks & Obstructions

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Appendix 3:
MapCreate 6 Symbol Key

MapCreate 6 contains hundreds of mapping symbols used to represent items ranging from geographic features to commercial Points of Interest (POI). The following list displays these symbols and the name of the item the symbol represents.

Interstate Highway

U.S. Highway

State Highway

Trans-Canada Highway

Quebec Autoroute Highway

Mexican Federal Highway

Highway Exit

Highway Exit with Info Center

Highway Exit with Parking Area

Highway Exit with Picnic Area

Highway Exit with Rest Area

Highway Exit with Scenic Area

Highway Exit with Service Area

Highway Exit with Toll Plaza

Highway Exit with Weigh Station

Airport

Building

Cemetery

Fire Station

Library

Mine

Park

School

Shopping Center

Summit

Tower

Trail Name

City, Community, or Subdivision Name

Land Feature Name

Water Feature Name

Miscellaneous Landmark Name

Square Green Daybeacon (Navaid)

Square White or Unidentified Day-beacon (Navaid)

Red Triangle Daybeacon (Navaid)

White Triangle Daybeacon (Navaid)

Green Lighted Buoy (Navaid)

Red Lighted Buoy (Navaid)

White or Unidentified Lighted Buoy (Navaid)

Green Unlighted Buoy (Navaid)

Red Unlighted Buoy (Navaid)

White or Unidentified Unlighted Buoy (Navaid)

Light (Navaid)

Nautical Chart Note

Platform (Navaid)

Radiobeacon (Navaid)

Awash or Visible Obstruction

Awash Rock

Covered Rock

Dangerous Submerged Wreck

Non-Dangerous Submerged Wreck

Visible Wreck

Airport (POI)

Amusement Place, Billiards or Ca-sino (POI)

College or University (POI)

Fishing-Related (POI)

Hall or Auditorium (POI)

Lodging (POI)

Hospital (POI)

Camp or Campground (POI)

Medical Service (POI)

RV Park or RV Service (POI)

Miscellaneous Attraction (POI)

Marina (POI)

Museum or Historical Place (POI)

Boating Dealer or Service (POI)

Post Office

Boat Equipment & Supplies (POI)

Tourist Attraction or Tour (POI)

Gas Station (POI)

Zoo (POI)

Auto Parts or Service(POI)

Movie Theater (POI)

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Appendix 4: Displaying Specialty Maps With Fishing or Aeronautical Data

A new feature in MapCreate 6.3 allows you to view LEI's special fishing or aviation mapping products on the MapCreate screen. The feature works with Inland Mapping System™ Fishing Hot Spots® fishing maps or Jeppesen® Americas and Jeppesen® International aeronautical databases, along with the LEI® Obstructions aeronautical database.

Showing fishing or aviation details on the computer makes it easier to plan trips and manage waypoints, routes and other GPS data. All MapCreate GPS data tools work just as they do with regular maps.

To display a special LEI map product, just place the memory card containing the map or database in the MMC card reader, then launch MapCreate. (You can also start MapCreate first, then insert the card.) In a moment or two, MapCreate begins to read the map on the card, and the hourglass symbol is shown in the lower left corner of the screen. While the special map is read, the Master Map window may go blank for a moment before it reappears with the special mapping data displayed.

IMS Fishing Hot Spots Maps
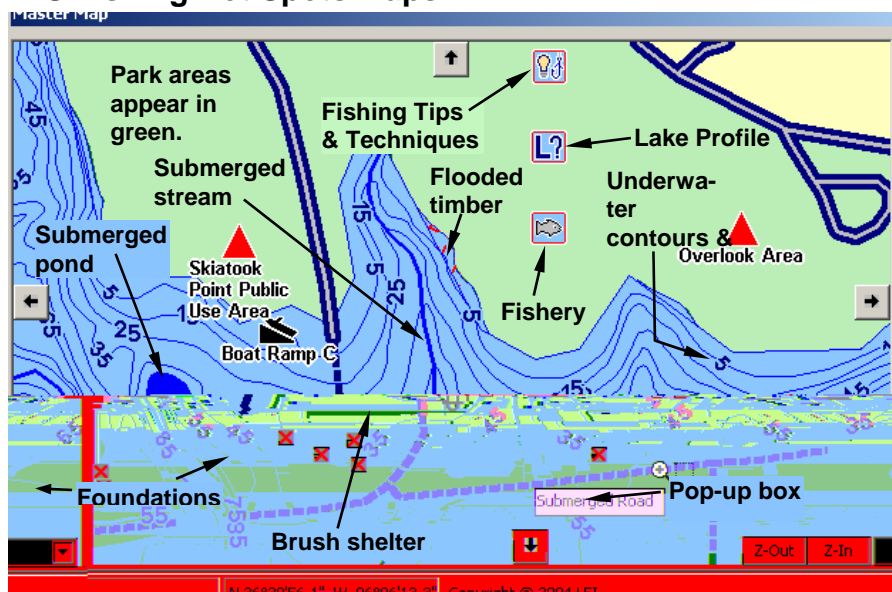
Master Map window showing detail from an IMS Fishing Hot Spots map of Lake Skiatook. Place the Center Map or Zoom Area pointer over an item and a pop-up information box appears.

Move your mouse pointer over an item and a pop-up tool-tip box appears, identifying the item. In a Brunton Atlas unit, the cursor also identifies map symbols with a pop-up box, but additional information is available from certain symbols.

For example, use the cursor to select a red triangle public use area or facility point symbol, then press the **Find** key in the Atlas hand-held units. A Waypoint Information screen appears.
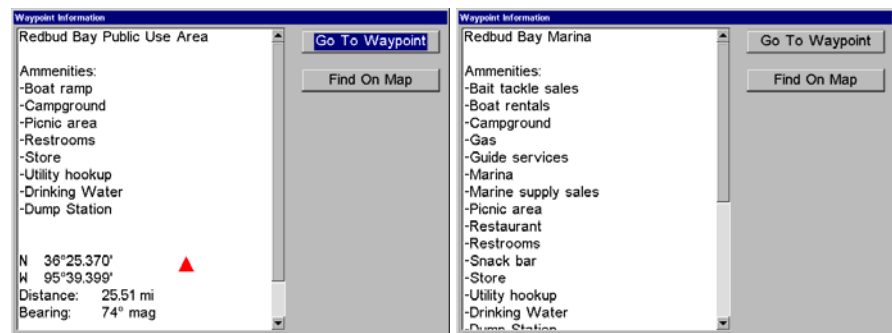
IMS Fishing Hot Spots Waypoint Information screen from a GPS unit, showing amenities available at a public use area and a marina.

There are other important Fishing Hotspot symbols that display information only on your GPS unit. They are all accessed with the cursor and either the **Wpt** or **Find** key. These symbols are usually (but not always) located near the dam site, and they include:

Fishing Tips & Techniques: the Waypoint Information screen will display an article covering topics ranging from lures to locations. Tackle hints, types of cover and presentation methods are discussed by season and species, covering the major species in this lake.

Lake Profile: the screen will display an overview of the lake itself, including information on size, depth, shoreline, bottom composition, water source, water quality and fish cover.

Fishery: the screen will display information on the major species present, their numbers and sizes, management practices, forage species and any special regulations.

Fishing Area Information: this symbol appears in scattered locations around certain lakes. When this symbol is selected, the Waypoint Information screen will display specific fishing tips for that area of the lake.

MapCreate lets you turn off the Master Map display of Map Category Options, such as depth, fishing areas, lake info, lake services, navigation information, and structure, but this does not change the detail in your IMS Fishing Hot Spots map.

Jeppesen Aviation Maps

In MapCreate, you can turn off the display of aviation Map Category Options, but that does not change the detail in your Jeppesen and aeronautical databases.

You won't get a high level of detail in MapCreate, but some map items do display pop-up tool-tip boxes when selected by your mouse pointer.

For example, move the Center Map or Zoom Area pointer just inside an airspace line, and a pop-up box identifies the airport, the controlling agency and the number of communication frequencies.
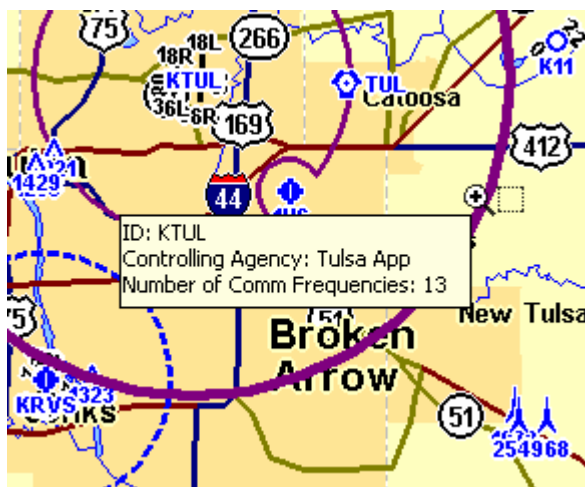
Jeppesen airspace data displayed in a MapCreate pop-up box.

Point to an airport identifier and you'll see a pop-up box with the number of communication frequencies, number of runways and number of services available at that field. Point to a runway, and you can see its length, surface type and lighting.
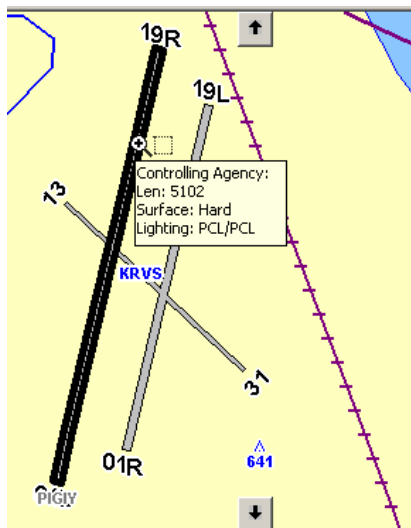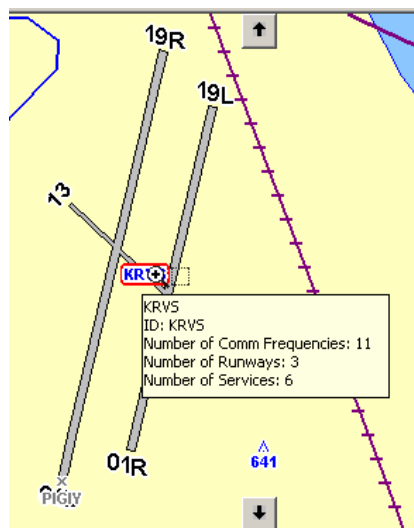
**Jeppesen airport (left) and runway information (right)
displayed in MapCreate pop-up boxes.**

Master Map window at the 60 mile zoom level showing detail from a Jeppe-sen Americas aeronautical database. Intersections appear as gray Xs; other symbols appear as they do in sectional paper charts.

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Appendix 5: Considerations When Planning Highway Routes

Tips on Making Better Routes for Highway Navigation

How you make a *highway* route depends on your type of travel and whether you prefer to use the GPS unit's compass rose screen, the map screen or both for navigation. These factors determine how many route waypoints to use, and where you place them.

A simple, straight-legged route by water or by air is easy to make, as is a route following a square grid of city streets. Obstructions are usually few in number, and you're traveling in a more or less straight line from waypoint to waypoint.

Following a highway's twists and turns is different because all GPS units link route waypoints in straight lines.

Some navigators prefer to follow a route visually on the map. They glance at the route and the position indication arrow as the Custom Map moves across their GPS screen. With one look, they can see the route symbols and the highway they are following together, at the same time.

Other travelers prefer the simpler display provided by the compass rose screen. The compass rose can literally point the direction to steer toward the next waypoint in a route.

You may fall in yet another group of navigators who use both navigation techniques, switching back and forth between the map and compass rose screens during a journey.

"High Resolution" vs. "Low Resolution" Routes

MapCreate and your Brunton Atals unit are capable of remarkably precise "high resolution" routes that can follow every S-curve of a mountain high-way. This type of route — with a relatively *large* number of waypoints per mile — is well-suited to compass rose navigation. With it, you can virtually ignore the map screen and arrive at your destination using only the compass rose.

Your GPS has a course deviation (or off course) alarm which will alert you when you drift too far to the right or left of your route's center line. There is also an arrival alarm, which alerts you when you get within a certain distance of a route waypoint. With a "high resolution" route, you can set the off course alarm and the arrival alarm to small distances somewhere between 0.1 and 0.5 miles. (You can turn the alarms off or on, and you have the option of turning the alarms' sound feature on or off as well.)

The amazing capabilities of GPS navigation can tempt first-time users to

build highly detailed highway routes. These "high res" routes are fun to use, but they have some drawbacks. They require placing a route waypoint at practically every curve in the road. This takes a relatively large number of waypoints for the distance traveled. A large set of waypoints close together can give your Custom Map a cluttered look. If the route is very long, it takes more time for you to make it in MapCreate. And, finally, GPS units compatible with MapCreate versions 5 and 6 can hold 100 routes, but each route can contain only 100 waypoints.

So, take a long cross-country trip on winding roads and you can use up 100 waypoints before you reach your journey's end. This means you will need to break up the trip into multiple routes. That's usually not a problem, since most travelers don't prefer to run all day and night without stopping for food, fuel or rest.

On the other hand, "low res" routes take less time to prepare and are plenty accurate to get you there. This type of route — with a relatively *small* number of waypoints per mile — is well-suited to map screen navigation. You can cover a longer distance for the amount of waypoints you use. "Low res" routes also tend to reduce the clutter on your Custom Map.

A good technique for "low res" routes is to set most of your waypoints where you make major direction changes, or where the destination is important for one reason or another. Here are two examples:

Let's say you are heading straight north on a state highway, but need to turn right onto a county road to reach a recreation area. Set a route waypoint at or just a little before the highway intersection. Setting the waypoint a short distance before your turn is useful (especially at highway speeds) if you need some warning to change lanes or slow down for the turn. (You can even rename that route waypoint "turn" or "turn right.")

Now let's say you are traveling in a generally straight line. You don't need to set a waypoint for a turn, but you want to stop in a certain city along the way for food or fuel. Set a route waypoint at the city limits or downtown, and your Brunton Atlas can tell you how many miles to town and how long it will take to get there.

If you limit the number of waypoints you make, your compass rose will still work fine for those major changes in direction, but it won't match the twists and curves of the pavement as closely as a "high resolution" route would.

For example, you could be traveling toward a destination to the south, but following a highway curve around a mountain. As you take the curve to your right, your car will actually be pointing west as you follow the pavement. However, the compass rose is accurately pointing to that next southern waypoint, now 90 degrees off to your left. If you were depending only on the compass rose at that moment, it might look like you were off

course. As you come around the mountain and the pavement turns back south, the compass rose, the route and the pavement will all line up together once again.

The off course alarm also requires some adjustment when using low res routes. In our mountain curve example, if the alarm was set at 0.1 mile, it would go off as we rounded the curve and "deviated" more than 0.1 mile from the route center line.

Some navigators avoid this by turning the course deviation alarm off. With the alarm off, however, you may take a wrong turn and it could be some time before you catch the error. You can leave the alarm on if you simply expand the distance setting that triggers the alarm. In our mountain highway example, setting the course alarm to 1.5 miles would keep the alarm from going off as we rounded the mountain.

Highway route "resolution" is ultimately a matter of personal taste. Experiment with these techniques to see which one suits you best. Most users strike some sort of balance between them. Just remember: the more precise you are in following the turns of the pavement, the more waypoints you will use. That, in turn, affects how your GPS features work with your route.

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